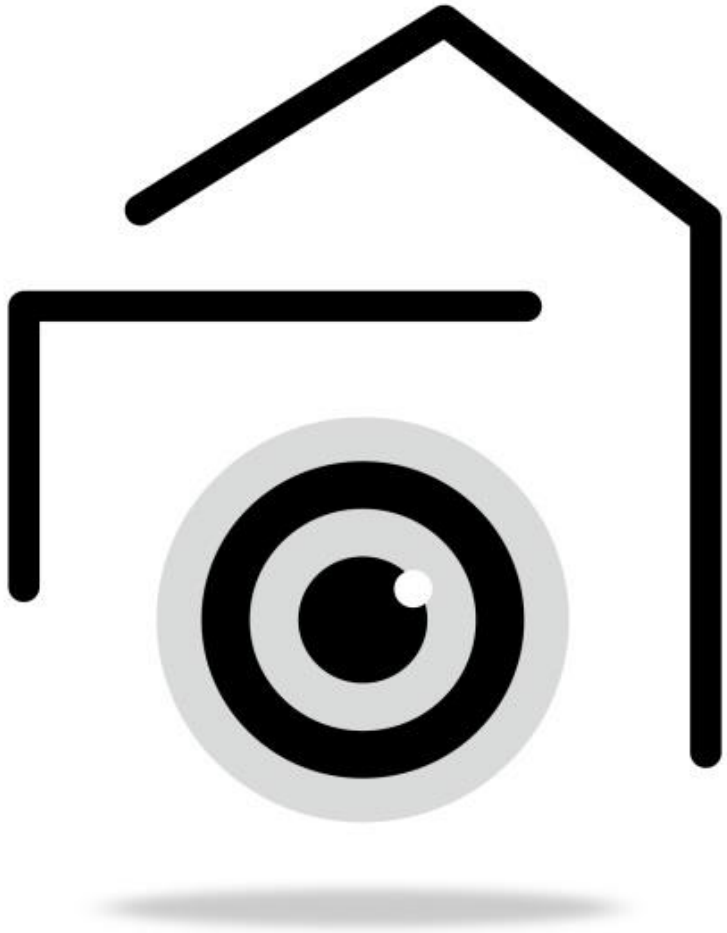
Network Video Recorder

NVR-CH4

NVR-CH8

NVR-CH16

User Manual



For further information, including datasheets, FAQ and technical support please visit:

www.hills.com.au/videosecurity

Regulatory information

FCC information

FCC compliance: This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

CE

This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the Low Voltage Directive 2006/95/EC, the EMC Directive 2004/108/EC, the RoHS Directive 2011/65/EU.

2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.

Preventive and Cautionary Tips

Before connecting and operating your device, please be advised of the following tips:

- Ensure unit is installed in a well-ventilated, dust-free environment.
- Unit is designed for indoor use only.
- Keep all liquids away from the device.
- Ensure environmental conditions meet factory specifications.
- Ensure unit is properly secured to a rack or shelf. Major shocks or jolts to the unit as a result of dropping it may cause damage to the sensitive electronics within the unit.
- Use the device in conjunction with an UPS if possible.
- Power down the unit before connecting and disconnecting accessories and peripherals.
- A factory recommended HDD should be used for this device.

Trademarks and Registered Trademarks

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- HDMI, HDMI mark and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.
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- VGA is the trademark of IBM.
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Thank you for purchasing our product. If there is any question or request, please do not hesitate to contact dealer.
The figures in the manual are for reference only.

Product Key Features

General

- Connectable to network cameras, network dome and encoders.
- Connectable to the smart IP cameras.
- PAL/NTSC adaptive video inputs.
- Each channel supports dual-stream.
- Up to 16 network cameras can be connected to NVR-CH16, and 8 network cameras to NVR-CH8 and 4 network cameras to NVR-CH4.
- Independent configuration for each channel, including resolution, frame rate, bit rate, image quality, etc.
- The quality of the input and output record is configurable.

Local Monitoring

- Simultaneous HDMI™ and VGA outputs.
- HDMI™ and VGA outputs at up to 1920×1080 resolution.
- Multiple screen display in live view is supported, and the display sequence of channels is adjustable.
- Live view screen can be switched in group, and manual switch and automatic cycle live view are also provided, and the interval of automatic cycle can be adjusted.
- Quick setting menu is provided for live view.
- Motion detection, video tampering, VCA (Video Content Analysis) alarm, video exception alert and video loss alert functions.
- Privacy mask.
- Multiple PTZ protocols supported; PTZ preset, patrol and pattern.
- Zooming in by clicking the mouse and PTZ tracing by dragging mouse.

HDD Management

- For NVR-CH16, 3 more SATA hard disks can be connected; 1x 3TB hard disk pre-installed.
  For NVR-CH8, 1 more SATA hard disk can be connected; 1x 3TB hard disk pre-installed.
  For NVR-CH4, no extra SATA hard disks can be connected; 1x 3TB hard disk pre-installed.
  (Each extra disk with a maximum of 4TB storage capacity.)
- Support S.M.A.R.T. and bad sector detection.
- HDD group management.
- Support HDD standby function.
- HDD property: redundancy, read-only, read/write (R/W).
- HDD quota management; different capacity can be assigned to different channel.

Recording and Playback

- Holiday recording schedule configuration.
- Continuous and event video recording parameters.
- Multiple recording types: manual, continuous, alarm, motion, motion | alarm, motion & alarm, and VCA.
- 8 recording time periods with separated recording types each day.
- Pre-record and post-record for alarm, motion detection for recording, and pre-record time for schedule and manual recording.

- Searching record files by events (alarm input/motion detection/VCA).
- Tag adding for record files, searching and playing back by tags.
- Locking and unlocking record files.
- Local redundant recording.
- Provide new playback interface with easy and flexible operation.
- Searching and playing back record files by camera No., recording type, start time, end time, etc.
- Smart search for the selected area in the video.
- Zooming in when playback.
- Reverse playback of multi-channel.
- Supports pause, play reverse, speed up, speed down, skip forward, and skip backward when playback, and locating by dragging the mouse.
- Up to 16-ch synchronous playback at 4CIF real time.

Backup

- Export video data by USB or SATA device.
- Export video clips when playback.
- Management and maintenance of backup devices.

Alarm and Exception

- Configurable arming time of alarm input/output.
- Alarm for video loss, motion detection, VCA, video tampering, HDD full, HDD error, network disconnected, IP confliction, illegal login, abnormal record, and PoE power overload (for the models support PoE interfaces only), etc.
- Alarm triggers full screen monitoring, audio alarm, notifying surveillance center, sending email and alarm output.
- Automatic restore when system is abnormal.

Other Local Functions

- Operable by front panel (depends on model), mouse, and remote control.
- Three-level user management; admin user is allowed to create many operating accounts and define their operating permission, which includes the limit to access any channel.
- Operation, alarm, exceptions and log recording and searching.
- Manually triggering and clearing alarms.
- Import and export of device configuration information.

Network Functions

- Self-adaptive 10M/100M/1000M network interfaces are provided, and the working modes are configurable: multi-address, load balance, network fault tolerance;
- 4 independent PoE network interfaces are provided for NVR-CH4;
- 8 independent PoE network interfaces are provided for NVR-CH8;
- 16 independent PoE network interfaces are provided for NVR-CH16.
- Independent built-in switch network interfaces are provided.
- IPv6 is supported.
- TCP/IP protocol, PPPoE, DHCP, DNS, DDNS, NTP, SADP, SMTP, SNMP, NFS, and iSCSI are supported.
- TCP, UDP and RTP for unicast.
- Auto/Manual port mapping by UPnP^{TM}.
- Remote reverse playback via RTSP.
- Support accessing by the platform via ONVIF.
- Remote search, playback, download, locking and unlocking of the record files, and the breakpoint resume

is supported for downloading files.

- Remote parameters setup; remote import/export of device parameters.
- Remote viewing of the device status, system logs and alarm status.
- Remote keyboard operation.
- Remote locking and unlocking of control panel and mouse.
- Remote HDD formatting and program upgrading.
- Remote system restart and shutdown.
- RS-232, RS-485 transparent channel transmission.
- Alarm and exception information can be sent to the remote host
- Remotely start/stop recording.
- Remotely start/stop alarm output.
- Remote PTZ control.
- Remote JPEG capture.
- Two-way audio and voice broadcasting.

Development Scalability:

- SDK for Windows and Linux system.
- Source code of application software for demo.
- Development support and training for application system.

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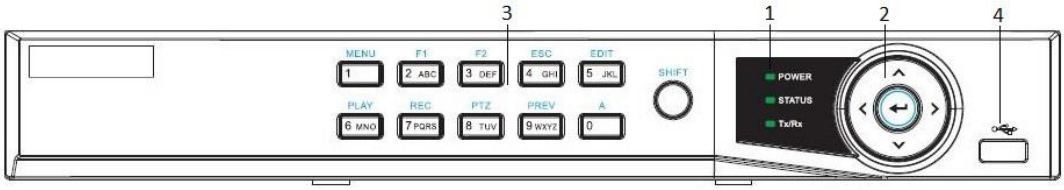
Chapter 1 Introduction

1.1 Front Panel

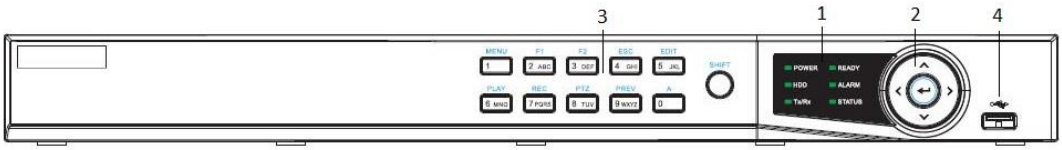
NVR-4Channel (NVR-CH4)



No.	Name		Description
1	Status Indicator	Power	Power indicator turns yellow when system is running.
		Status	Status indicator blinks red when data is being read from or written to HDD.
		Tx/Rx	Tx/Rx indictor blinks yellow when network connection is functioning properly.
2	Control Buttons	DIRECTION	In menu mode, the direction buttons are used to navigate between different fields and items and select setting parameters.
			In playback mode, the Up and Down buttons are used to speed up and slow down record playing, and the Left and Right buttons are used to move the recording 30s forward or backward.
			In the image setting interface, the up and down button can adjust the level bar of the image parameters. In live view mode, these buttons can be used to switch channels.
		ENTER	The Enter button is used to confirm selection in menu mode; or used to check checkbox fields and ON/OFF switch.
			In playback mode, it can be used to play or pause video.
			In single-frame play mode, pressing the Enter button will play the video by a single frame.
			In auto sequence view mode, the buttons can be used to pause or resume auto sequence.
3	Composite Keys	SHIFT	Switch between the numeric or letter input and functions of the composite keys. (Input letter or numbers when the light is out; Realize functions when the light is red.)
		1/MENU	Enter numeral “1”;
			Access the main menu interface.
		2/ABC/F1	Enter numeral “2”;
			Enter letters “ABC”;
			The F1 button when used in a list field will select all items in the list.

			In PTZ Control mode, it will turn on/off PTZ light and when the image is zoomed in, the key is used to zoom out.
		3/DEF/F2	Enter numeral “3”;
			Enter letters “DEF”;
			The F2 button is used to change the tab pages.
			In PTZ control mode, it zooms in the image.
		4/GHI/ESC	Enter numeral “4”;
			Enter letters “GHI”;
			Exit and back to the previous menu.
		5/JKL/EDIT	Enter numeral “5”;
			Enter letters “JKL”;
			Delete characters before cursor;
			Check the checkbox and select the ON/OFF switch;
			Start/stop record clipping in playback.
		6/MNO/PLAY	Enter numeral “6”;
			Enter letters “MNO”;
			Playback, for direct access to playback interface.
		7/PQRS/REC	Enter numeral “7”;
			Enter letters “PQRS”;
			Open the manual record interface.
		8/TUV/PTZ	Enter numeral “8”;
			Enter letters “TUV”;
			Access PTZ control interface.
		9/WXYZ/PREV	Enter numeral “9”;
			Enter letters “WXYZ”;
			Multi-channel display in live view.
		0/A	Enter numeral “0”;
			Shift the input methods in the editing text field. (Upper and lowercase, alphabet, symbols or numeric input).
			Double press the button to switch the main and auxiliary output.
4	**USB Interfaces**		Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD)

NVR-8Channel (NVR-CH8)

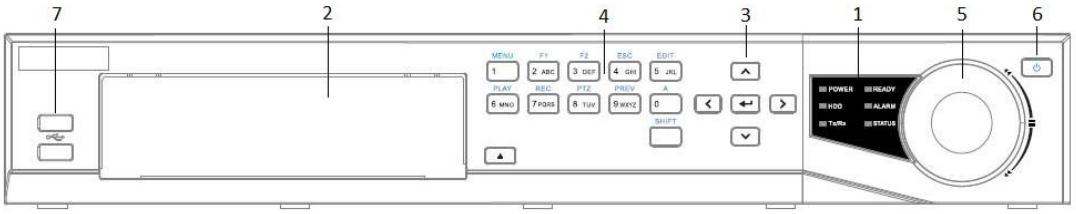


No.	Name		Function Description
1	**Status Indicators**	**POWER**	Turns green when NVR is powered up.
		READY	The LED is green when the device is running normally.
		STATUS	The light is green when the IR remote control is enabled; The light is red when the function of the composite keys (SHIFT)

No.	Name		Function Description
			are used; The light is out when none of the above conditions are met.
		ALARM	The light is red when there is an alarm occurring.
		HDD	Blinks red when HDD is reading/writing.
		Tx/Rx	Blinks green when network connection is functioning normally.
2	**Control Buttons**	**DIRECTION**	In menu mode, the direction buttons are used to navigate between different fields and items and select setting parameters.
			In playback mode, the Up and Down buttons are used to speed up and slow down record playing, and the Left and Right buttons are used to move the recording 30s forwards or backwards.
			In the image setting interface, the up and down button can adjust the level bar of the image parameters. In live view mode, these buttons can be used to switch channels.
		ENTER	The Enter button is used to confirm selection in menu mode; or used to check checkbox fields and ON/OFF switch.
			In playback mode, it can be used to play or pause video.
			In single-frame play mode, pressing the Enter button will play the video by a single frame.
			In auto sequence view mode, the buttons can be used to pause or resume auto sequence.
3	**Composite Keys**	**SHIFT**	Switch between the numeric or letter input and functions of the composite keys. (Input letter or numbers when the light is out; Realize functions when the light is red.)
		1/MENU	Enter numeral “1”;
			Access the main menu interface.
		2/ABC/F1	Enter numeral “2”;
			Enter letters “ABC”;
			The F1 button when used in a list field will select all items in the list.
			In PTZ Control mode, it will turn on/off PTZ light and when the image is zoomed in, the key is used to zoom out.
		3/DEF/F2	Enter numeral “3”;
			Enter letters “DEF”;
			The F2 button is used to change the tab pages.
			In PTZ control mode, it zooms in the image.
		4/GHI/ESC	Enter numeral “4”;
			Enter letters “GHI”;
			Exit and back to the previous menu.
		5/JKL/EDIT	Enter numeral “5”;
			Enter letters “JKL”;
			Delete characters before cursor;
			Check the checkbox and select the ON/OFF switch;
			Start/stop record clipping in playback.
		6/MNO/PLAY	Enter numeral “6”;

No.	Name		Function Description
			Enter letters “MNO”;
			Playback, for direct access to playback interface.
		7/PQRS/REC	Enter numeral “7”;
			Enter letters “PQRS”;
			Open the manual record interface.
		8/TUV/PTZ	Enter numeral “8”;
			Enter letters “TUV”;
			Access PTZ control interface.
		9/WXYZ/PREV	Enter numeral “9”;
			Enter letters “WXYZ”;
			Multi-channel display in live view.
		0/A	Enter numeral “0”;
			Shift the input methods in the editing text field. (Upper and lowercase, alphabet, symbols or numeric input).
			Double press the button to switch the main and auxiliary output.
4	**USB Interfaces**		Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).

NVR-16Channel (NVR-CH16)



No.	Name		Function Description
1	**Status Indicators**	**POWER**	Turns green when NVR is powered up.
		READY	The LED is green when the device is running normally.
		STATUS	The light is green when the IR remote control is enabled; The light is red when the function of the composite keys (SHIFT) are used; The light is out when none of the above condition is met.
		ALARM	The light is red when there is an alarm occurring.
		HDD	Blinks red when HDD is reading/writing.
		Tx/Rx	Blinks green when network connection is functioning normally.
2	**DVD-R/W**		Slot for DVD-R/W.
3	**Control Buttons**	**DIRECTION**	In menu mode, the direction buttons are used to navigate between different fields and items and select setting parameters.

No.	Name		Function Description
			In playback mode, the Up and Down buttons are used to speed up and slow down record playing, and the Left and Right buttons are used to move the recording 30s forwards or backwards.
			In the image setting interface, the up and down button can adjust the level bar of the image parameters. In live view mode, these buttons can be used to switch channels.
		ENTER	The Enter button is used to confirm selection in menu mode; or used to check checkbox fields and ON/OFF switch.
			In playback mode, it can be used to play or pause video.
			In single-frame play mode, pressing the Enter button will play the video by a single frame.
			In auto sequence view mode, the buttons can be used to pause or resume auto sequence.
4	**Composite Keys**	**SHIFT**	Switch between the numeric or letter input and functions of the composite keys. (Input letter or numbers when the light is out; Realize functions when the light is red.)
		1/MENU	Enter numeral “1”;
			Access the main menu interface.
		2/ABC/F1	Enter numeral “2”;
			Enter letters “ABC”;
			The F1 button when used in a list field will select all items in the list.
			In PTZ Control mode, it will turn on/off PTZ light and when the image is zoomed in, the key is used to zoom out.
		3/DEF/F2	Enter numeral “3”;
			Enter letters “DEF”;
			The F2 button is used to change the tab pages.
			In PTZ control mode, it zooms in the image.
		4/GHI/ESC	Enter numeral “4”;
			Enter letters “GHI”;
			Exit and back to the previous menu.
		5/JKL/EDIT	Enter numeral “5”;
			Enter letters “JKL”;
			Delete characters before cursor;
			Check the checkbox and select the ON/OFF switch;
			Start/stop record clipping in playback.
		6/MNO/PLAY	Enter numeral “6”;
			Enter letters “MNO”;
			Playback, for direct access to playback interface.
		7/PQRS/REC	Enter numeral “7”;
			Enter letters “PQRS”;
			Open the manual record interface.
		8/TUV/PTZ	Enter numeral “8”;
			Enter letters “TUV”;
			Access PTZ control interface.
		9/WXYZ/PRE	Enter numeral “9”;

No.	Name		Function Description
		V	Enter letters “WXYZ”;
			Multi-channel display in live view.
		0/A	Enter numeral “0”;
			Shift the input methods in the editing text field. (Upper and lowercase, alphabet, symbols or numeric input).
			Double press the button to switch the main and auxiliary output.
5	JOG SHUTTLE Control		Move the active selection in a menu. It will move the selection up and down.
			In Live View mode, it can be used to cycle through different channels.
			In the Playback mode, it can be used to jump 30s forward/backward in video files.
			In PTZ control mode, it can control the movement of the PTZ camera.
6	POWER ON/OFF		Power on/off switch.
7	USB Interfaces		Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).

1.2 IR Remote Control Operations

The NVR may also be controlled with the included IR remote control, shown in Figure 1. 1.

Note:

Batteries (2×AAA) must be installed before operation.

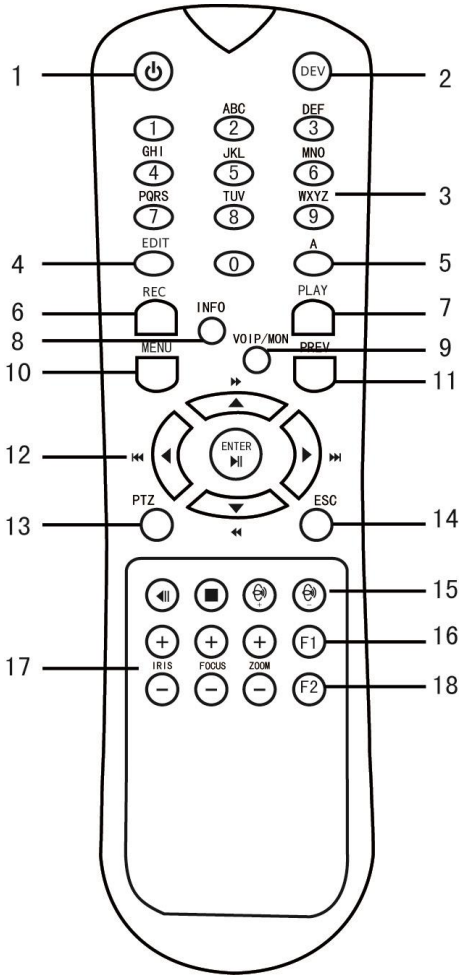


Figure 1. 1 Remote Control

The keys on the remote control closely resemble the ones on the front panel. See Table 1.5.

Table 1. 1 Description of the Soft Keyboard Icons

No.	Name	Description
1	**POWER**	Power on/off the device.
2	**DEV**	Enables/Disables Remote Control.
3	**Alphanumeric Buttons**	Switch to the corresponding channel in Live view or PTZ Control mode.
		Input numbers and characters in Edit mode.
		Switch between different channels in the Playback mode.
4	**EDIT Button**	Edit text fields. When editing text fields, it will also function as a Backspace button to delete the character in front of the cursor.

No.	Name	Description
		On checkbox fields, pressing the button will *check* the checkbox.
		In PTZ Control mode, the button adjusts the iris of the camera.
		In Playback mode, it can be used to generate video clips for backup.
		Enter/exit the folder of USB device.
5	**A Button**	Adjust focus in the PTZ Control menu.
		It is also used to switch between input methods (upper and lowercase alphabet, symbols and numeric input).
6	**REC Button**	Enter the Manual Record setting menu.
		In PTZ control settings, press the button and then you can call a PTZ preset by pressing Numeric button.
		It is also used to turn audio on/off in the Playback mode.
7	**PLAY Button**	The button is used to enter the All-day Playback mode.
		It is also used to auto scan in the PTZ Control menu.
8	**INFO Button**	Reserved.
9	**VOIP Button**	Switch between main and spot output.
		In PTZ Control mode, it can be used to zoom out the image.
10	**MENU Button**	Press the button will help you return to the Main menu (after successful login).
		Press and hold the button for 5 seconds will turn off audible key beep.
		In PTZ Control mode, the MENU button will start wiper (if applicable).
		In Playback mode, it is used to show/hide the control interface.
11	**PREV Button**	Switch between single screen and multi-screen mode.
		In PTZ Control mode, it is used to adjust the focus in conjunction with the A/FOCUS+ button.
12	**DIRECTION Button**	Navigate between different fields and items in menus.
		In the Playback mode, the Up and Down button is used to speed up and slow down recorded video. The Left and Right button will select the next and previous record files.
		In Live View mode, these buttons can be used to cycle through channels.
		In PTZ control mode, it can control the movement of the PTZ camera.
	ENTER Button	Confirm selection in any of the menu modes.
		It can also be used to *tick* checkbox fields.
		In Playback mode, it can be used to play or pause the video.
		In single-frame Playback mode, pressing the button will advance the video by a single frame.
13	**PTZ Button**	In Auto-switch mode, it can be used to stop /start auto switch.
14	**ESC Button**	Back to the previous menu.
		Press for Arming/disarming the device in Live View mode.
15	**RESERVED**	Reserved for future usage.
16	**F1 Button**	Select all items on the list when used in a list field.
		In PTZ Control mode, it will turn on/off PTZ light (if applicable).

No.	Name	Description
		In Playback mode, it is used to switch between play and reverse play.
17	PTZ Control Buttons	Buttons to adjust the iris, focus and zoom of a PTZ camera.
18	F2 Button	Cycle through tab pages.
		In synchronous playback mode, it is used to switch between channels.

Troubleshooting Remote Control:

Note:

Make sure you have installed batteries properly in the remote control. And you have to aim the remote control at the IR receiver in the front panel.

If there is no response after you press any button on the remote, follow the procedure below to troubleshoot.

Steps:

1. Go to Menu > Settings > General > More Settings by operating the front control panel or the mouse.
2. Check and remember NVR ID#. The default ID# is 255. This ID# is valid for all the IR remote controls.
3. Press the DEV button on the remote control.
4. Enter the NVR ID# you set in step 2.
5. Press the ENTER button on the remote.

If the Status indicator on the front panel turns blue, the remote control is operating properly. If the Status indicator does not turn blue and there is still no response from the remote, please check the following:

1. Batteries are installed correctly and the polarities of the batteries are not reversed.
2. Batteries are fresh and not out of charge.
3. IR receiver is not obstructed.

If the remote still can’t function properly, please change a remote and try again, or contact the device provider.

1.2 USB Mouse Operation

A regular 3-button (Left/Right/Scroll-wheel) USB mouse can also be used with this NVR. To use a USB mouse:

1. Plug USB mouse into one of the USB interfaces on the front panel of the NVR.
2. The mouse should automatically be detected. If in a rare case that the mouse is not detected, the possible reason may be that the two devices are not compatible, please refer to the recommended the device list from your provider.

The operation of the mouse:

Table 1. 2 Description of the Mouse Control

Name	Action	Description
Left-Click	Single-Click	Live view: Select channel and show the quick set menu. Menu: Select and enter.
	Double-Click	Live view: Switch between single-screen and multi-screen.
	Click and Drag	PTZ control: pan, tilt and zoom. Video tampering, privacy mask and motion detection: Select target area. Digital zoom-in: Drag and select target area. Live view: Drag channel/time bar.
Right-Click	Single-Click	Live view: Show menu. Menu: Exit current menu to upper level menu.
Scroll-Wheel	Scrolling up	Live view: Previous screen. Menu: Previous item.
	Scrolling down	Live view: Next screen. Menu: Next item.

1.3 Input Method Description

Figure 1. 2 Soft Keyboard

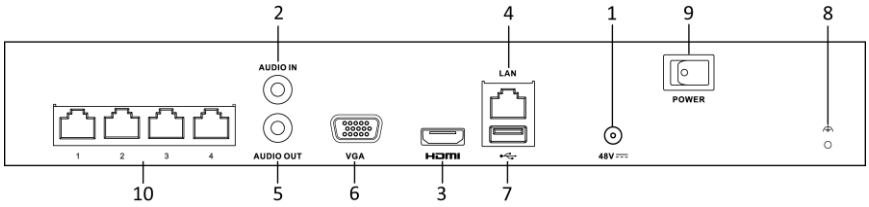
Description of the buttons on the soft keyboard:

Table 1. 3 Description of the Soft Keyboard Icons

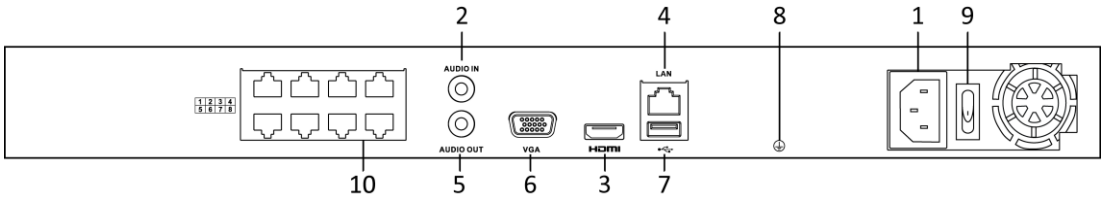
Icon	Description	Icon	Description
En	English	A	Capital English
123	Numbers	*+	Symbols
a	Lowercase/Uppercase	⌫	Backspace
␣	Space	Enter	Enter
ESC	Exit		

1.4 Rear Panel

NVR-4Channel (NVR-CH4)

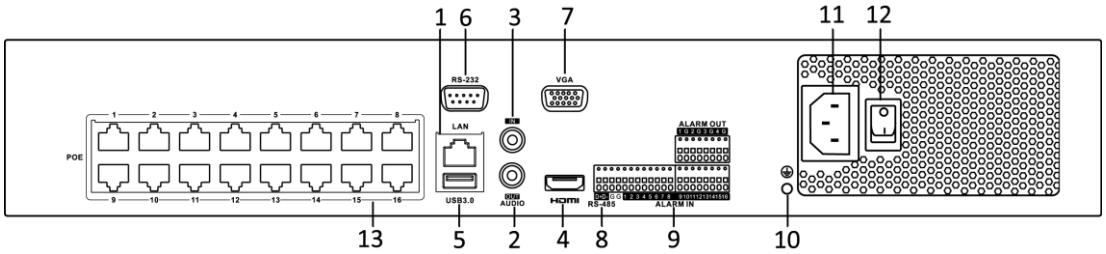


NVR-8Channel (NVR-CH8)



No.	Item	Description
1	**Power Supply**	48V DC power supply for NVR-CH4 and AC 100~240V for NVR-CH8.
2	**Audio In**	RCA connector for audio input.
3	**HDMI Interface**	HDMI video output connector.
4	**LAN Network Interface**	1 10 /100 /1000 Mbps self-adaptive Ethernet interface
5	**Audio Out**	RCA connector for audio output.
6	**VGA Interface**	DB9 connector for VGA output. Display local video output and menu.
7	**USB Interface**	Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).
8	**Ground**	Ground (needs to be connected when NVR starts up).
9	**Power Switch**	Switch for turning on/off the device.
10	**Network Interfaces with PoE function**	Network interfaces for the cameras and power over Ethernet.

NVR-16Channel (NVR-CH16)



No.	Item	Description
1	**LAN Interface**	1 network interface
2	**AUDIO OUT**	RCA connector for audio output.
3	**LINE IN**	RCA connector for audio input.
4	**HDMI**	HDMI video output connector.
5	**USB 3.0 interface**	Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).
6	**RS-232 Interface**	Connector for RS-232 devices.
7	**VGA**	DB9 connector for VGA output. Display local video output and menu.
8	**RS-485 Interface**	Half-duplex connector for RS-485 devices.
9	**ALARM IN**	Connector for alarm input.
	ALARM OUT	Connector for alarm output.
10	**GROUND**	Ground (needs to be connected when NVR starts up).
11	**AC 100V ~ 240V**	100V ~ 240V AC power supply.
12	**Power Switch**	Switch for turning on/off the device.
13	**Network Interfaces with PoE function**	Network interfaces for the cameras and power over Ethernet.

Chapter 2 Getting Started

2.1 Starting Up and Shutting Down the NVR

Purpose:

Proper startup and shutdown procedures are crucial to expanding the life of the NVR.

Before you start:

Check that the voltage of the extra power supply is the same with the NVR's requirement, and the ground connection is working properly.

Starting up the NVR:

Steps:

1. Check the power supply is plugged into an electrical outlet. It is HIGHLY recommended that an Uninterruptible Power Supply (UPS) be used in conjunction with the device. The Power indicator LED on the front panel should be red, indicating the device gets the power supply.
2. Turn on the power switch on the rear panel if the device starts up for the first time, or press the ⏻ button on the front panel. The Power indicator LED should turn blue indicating that the unit begins to start up.
3. After startup, the Power indicator LED remains blue. A splash screen with the status of the HDD appears on the monitor. The row of icons at the bottom of the screen shows the HDD status. 'X' means that the HDD is not installed or cannot be detected.

Shutting down the NVR

There are two proper ways to shut down the NVR.

- **OPTION 1: By Standard shutdown**

  Steps:

  1. Enter the Shutdown menu.

     Menu > Shutdown

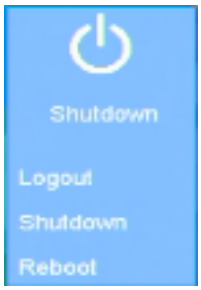


Figure 2. 1 Shutdown Menu

  2. Click the **Shutdown** button.
  3. Click the **Yes** button.

- **OPTION 2: By operating the front panel**

  Steps:

  1. Press and hold the ⏻ button on the front panel for 3 seconds.

2. Enter the administrator's username and password in the dialog box for authentication if required.
3. Click the **Yes** button.

Note:

Do not press the ⏻ button again when the system is shutting down.

Rebooting the NVR

In the Shutdown menu, you can also reboot the NVR.

Steps:

1. Enter the **Shutdown** menu by clicking Menu > Shutdown.
2. Click the **Logout** button to lock the NVR or the **Reboot** button to reboot the NVR.

2.2 Using the Wizard for Basic Configuration

By default, the Setup Wizard starts once the NVR has loaded, as shown in Figure 2. 2.

Figure 2. 2 Start Wizard Interface

Operating the Setup Wizard:

1. The Setup Wizard can walk you through some important settings of the NVR. If you do not want to use the Setup Wizard at that moment, click the **Cancel** button. You can also choose to use the Setup Wizard next time by leaving the "Start wizard when the device starts?" checkbox checked.
2. Click **Next** button on the Wizard window to enter the **Login** window, as shown in Figure 2. 3.

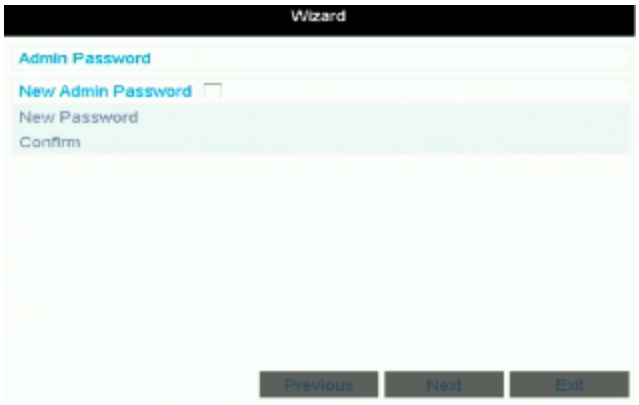


Figure 2. 3 Login Window

3. Enter the admin password. By default, the password is 'admin'.
4. To change the admin password, check the **New Admin Password** checkbox. Enter the new password and confirm the password in the given fields.
5. Click the **Next** button to enter the date and time settings window, as shown in Figure 2. 4.

Figure 2. 4 Date and Time Settings

6. After the time settings, click **Next** button which takes you back to the Network Setup Wizard window, as shown in Figure 2. 5.

Figure 2. 5 Network Configuration

Note:

And for the models which have the PoE or built-in switch network interfaces, the internal NIC IPv4 address should be configured for the cameras connecting to the PoE or built-in switch network interface of the NVR.

7. Click **Next** button after you configured the network parameters, which takes you to the HDD Management window, shown in Figure 2. 6.

Figure 2. 6 HDD Management

8. To initialize the HDD, click the **Init** button. Initialization removes all the data saved in the HDD.
9. Click **Next** button. You enter the Adding IP Camera interface.
10. Click **Search** to find online IP Camera. Select the IP camera to be added, and click the **Add** button.

Figure 2. 7 Search for IP Cameras

11. Click **Next** button. Configure the recording for the searched IP Cameras.

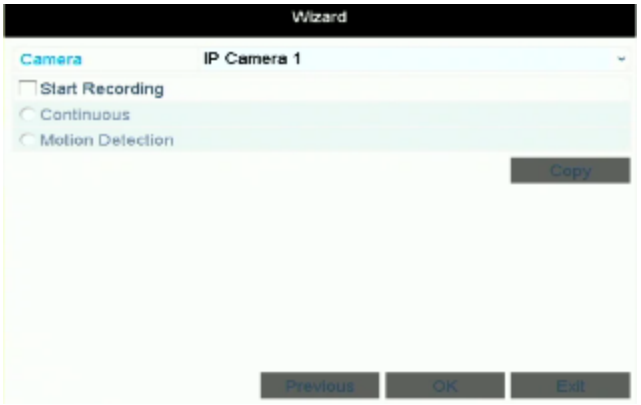


Figure 2. 8 Record Settings

12. Click **Copy** to copy the settings to other channels, as shown in Figure 2. 9.

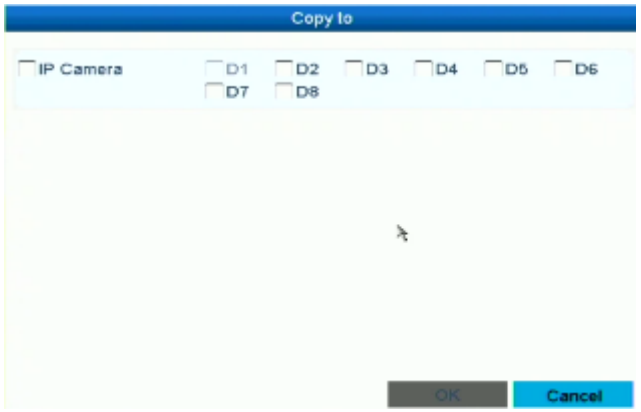


Figure 2. 9 Copy Record Settings

13. Click **OK** to complete the startup Setup Wizard.

2.3 Adding and Connecting the IP Cameras

2.3.1 Adding the Online IP Cameras

Purpose:

The main function of the NVR is to connect the network cameras and record the video got from it. So before you can get a live view or record of the video, you should add the network cameras to the connection list of the device.

Before you start:

Ensure the network connection is valid and correct. For detailed checking and configuring of the network, please see *Chapter Checking Network Traffic* and *Chapter Configuring Network Detection*.

- **OPTION 1:**

Steps:

1. Right-click the mouse when you in the live view mode to show the right-click menu on top of screen.

Figure 2. 10 Right-click Menu

2. Select **Add IP Camera** in the pop-up menu to enter the IP Camera Management interface.

IP Camera Management
Cam... Add/De... Status IP Camera A... Edit Up... Camera Name Protocol Device Mo...
D1 10.10.10.2 Bullet HILLS NVC-BM1
D2 10.10.10.3 Dome HILLS NVC-DF1
D3 10.10.10.4 Mini Dome HILLS NVC-DM1
D4 10.10.10.5 IPCamera 04 HILLS
D5 10.10.10.6 IPCamera 05 HILLS
D6 10.10.10.7 IPCamera 06 HILLS
D7 10.10.10.8 IPCamera 07 HILLS
D8 10.10.10.9 IPCamera 08 HILLS
10.2.2.4 HILLS DS-6601HI
Refresh Upgrade Delete Add All Custom Add
Net Receive Idle Bandwidth: 37Mbps
Exit

Figure 2. 11 Adding IP Camera Interface

3. The online cameras with same network segment will be displayed in the camera list. Click the button to add the camera.

Table 2. 1 Explanation of the icons

Icon	Explanation	Icon	Explanation
	Edit basic parameters of the camera		Add the detected IP camera.
	The camera is connected.		The camera is disconnected; you can click the icon to get the exception

			information of camera.
	Delete the IP camera		Advanced settings of the camera.

4. To add other IP cameras:

   1) Click the **Custom Adding** button to pop up the Add IP Camera (Custom) interface.

Figure 2. 12 Custom Adding IP Camera Interface

   2) You can edit the IP address, protocol, management port, and other information of the IP camera to be added.

   3) Click **Add** to add the camera.

- **OPTION 2:**

Steps:

1. Enter the Camera Management interface.

   Menu> Camera> Camera

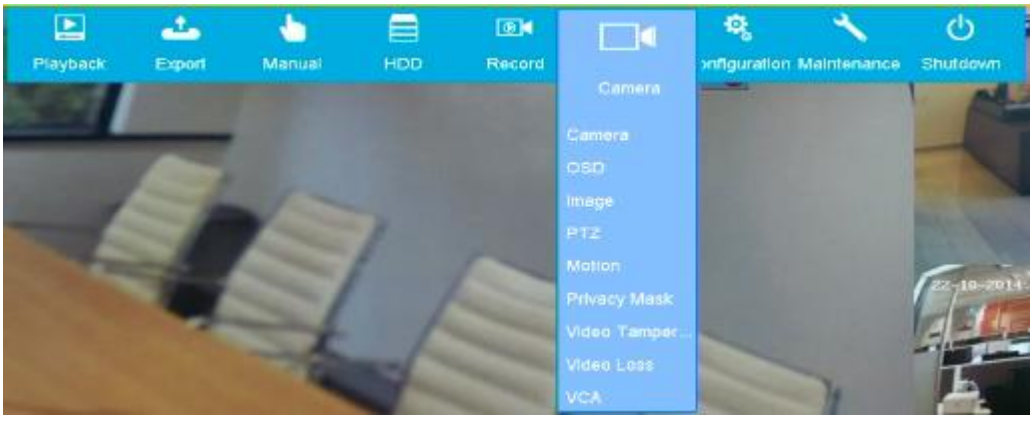


Figure 2. 13 Main Menu

2. Repeat the step 3 and 4 of OPTION 1 to add the camera.

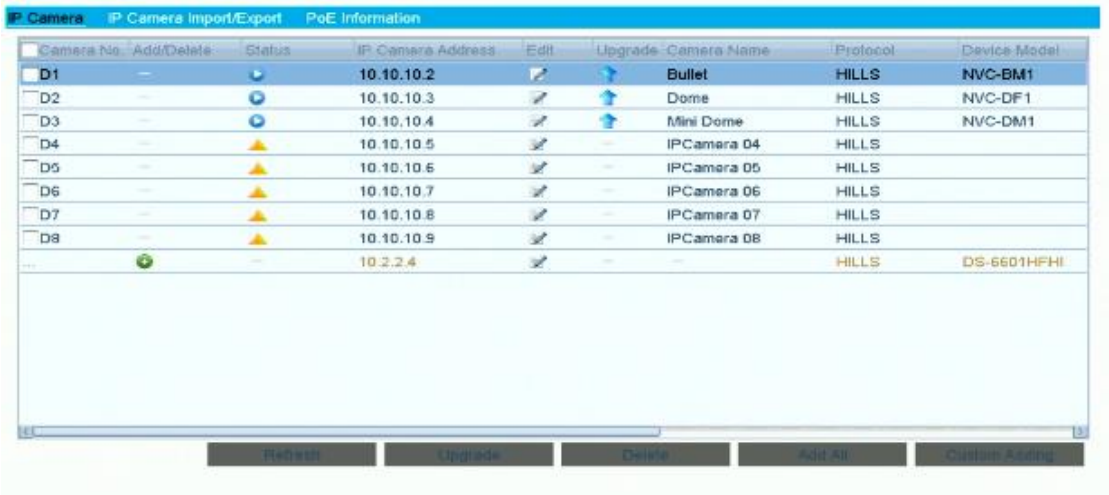


Figure 2. 14 IP Camera Management Interface

Table 2. 2 Explanation of the icons

Icon	Explanation	Icon	Explanation
	Edit basic parameters of the camera		Add the detected IP camera.
	The camera is connected; you can click the icon to get the live view of the camera.		The camera is disconnected; you can click the icon to get the exception information of camera.
	Delete the IP camera		Advanced settings of the camera.

3. (For the encoders with multiple channels only) check the checkbox of Channel No. in the pop-up window and click **OK** to finish adding.

2.3.2 Editing the Connected IP Cameras and Configuring Customized Protocols

After the adding of the IP cameras, the basic information of the camera lists in the page, you can configure the basic setting of the IP cameras.

Steps:

1. Click the icon to edit the parameters; you can edit the IP address, protocol and other parameters.

Figure 2. 15 Edit the Parameters

2. Click **OK** to save the settings and exit the editing interface.

To edit advanced parameters:

Steps:

1. Drag the horizontal scroll bar to the right side and click the icon.

2. You can edit the network information and the password of the camera.

3. Click **Apply** to save the settings and click **OK** to exit the interface.

Configuring the customized protocols

Purpose:

To connect the network cameras which are not configured with the standard protocols, you can configure the customized protocols for them.

Steps:

1. Click the **Protocol** button in the custom adding IP camera interface to enter the protocol management interface.

Figure 2. 16 Protocol Management Interface

There are 16 customized protocols provided in the system, you can edit the protocol name; and choose whether to enable the sub-stream.

2. Choose the protocol type of transmission and choose the transfer protocols.

Note:

Before customizing the protocol for the network camera, you have to contact the manufacturer of the network camera to consult the URL (uniform resource locator) for getting main stream and sub-stream.

The format of the URL is: [Type]://[IP Address of the network camera]:[Port]/[Path].

Example: rtsp://192.168.1.55:554/ch1/main/av_stream.

- **Protocol Name:** Edit the name for the custom protocol.
- **Enable Substream:** If the network camera does not support sub-stream or the sub-stream is not needed leave the checkbox empty.
- **Type:** The network camera adopting custom protocol must support getting stream through standard RTSP.
- **Transfer Protocol:** Select the transfer protocol for the custom protocol.
- **Port:** Set the port No. for the custom protocol.
- **Path:** Set the resource path for the custom protocol. E.g., ch1/main/av_stream.

Note:

The protocol type and the transfer protocols must be supported by the connected network camera.

After adding the customized protocols, you can see the protocol name is listed in the dropdown list, please refer to **Error! Reference source not found.**.

---

3. Choose the protocols you just added to validate the connection of the network camera.

2.3.3 Editing IP Cameras Connected to the PoE or the Built-in Switch Interfaces

Note:

- As the adding camera steps for the built-in switch are the same with the ones for the PoE interfaces, we take the instruction of connecting to the network cameras via the PoE interface as an example.

The PoE interfaces enable the NVR system to pass electrical power safely, along with data, on Ethernet cabling to the connected network cameras.

For the NVR which supports the PoE function, it can connect to the network cameras directly via the PoE interfaces. And if you disable the PoE interface, you can also connect to the online network cameras.

Example:

When you want to connect 2 online cameras and connect 6 network cameras via PoE interfaces, you must disable 2 PoE interfaces in the Edit IP Camera menu.

Add Cameras for NVR Supporting PoE Function:

Before you start:

Connect the network cameras via the PoE interfaces.

Steps:

1. Enter the Camera Management interface.

Menu> Camera> Camera

Figure 2. 17 List of Connected Cameras

Note:

The cameras connecting to the PoE interface cannot be deleted in this menu.

2. Click the button, and select the Adding Method in the drop-down list.

- **Plug-and-Play:** It means that the camera is connected to the PoE interface, so in this case, the parameters of the camera cannot be edited. The IP address of the camera can only be edited in the Network Configuration interface, see *Chapter 8.1 Configuring General Settings* for detailed information.

Figure 2. 18 Edit IP Camera Interface - Plug-and-Play

- **Manual:** You can disable the PoE interface by selecting the manual while the current channel can be used as a normal channel and the parameters can also be edited.

  Input the IP address, the user name and password of administrator manually, and click **OK** to add the IP camera.

Figure 2. 19 Edit IP Camera Interface - Manual

2.3.4 Checking the PoE Information

Steps:

1. Enter the Camera Management interface.
   Menu> Camera> Camera
2. Click the **PoE Information** tab to view the PoE status.

IP Camera
IP Camera Import/Export
PoE Information
2.6W
2.9W
2.7W
1-4
5-8
Real Power: 8.3W
Remaining Power: 111.7W
Notice:
1.The rated power of all PoE ports is 120.0W.
2.The power range for each PoE port is 0-30.0W.
3.When the real power exceeds the rated power, the PoE ports will be powered off according to the camera No., from largest to smallest, until the real power turns to be less than the rated power.

Figure 2. 20 PoE Information Interface

3. You can see the PoE connection status: the connected PoE port is displayed as , and the disconnected one is displayed as . Besides, the power cunsumption of each port and all ports are also be clearly displayed.

Chapter 3 Live View

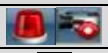
3.1 Introduction of Live View

Live view shows you the video image getting from each camera in real time. The NVR automatically enters Live View mode when powered on. It is also at the very top of the menu hierarchy, thus pressing the ESC many times (depending on which menu you're on) brings you to the Live View mode.

Live View Icons

In the live view mode, there are icons at the upper-right of the screen for each channel, showing the status of the record and alarm in the channel, so that you can know whether the channel is recorded, or whether there are alarms occur as soon as possible.

Table 3. 1 Description of Live View Icons

Icons	Description
	Alarm (video loss, video tampering, motion detection, sensor alarm or VCA alarm)
	Record (manual record, continuous record, motion detection , sensor alarm or VCA alarm triggered record)
	Alarm & Record
	Event/Exception (motion detection, sensor alarm, VCA alarm or exception information, appears at the lower-left corner of the screen. Please refer to *Chapter 7.7 Setting Alarm Response Actions* for details.)

3.2 Operations in Live View Mode

In live view mode, there are many functions provided. The functions are listed below.

- **Single Screen**: showing only one screen on the monitor.
- **Multi-screen:** showing multiple screens on the monitor simultaneously.
- **Auto-switch:** the screen is auto switched to the next one. And you must set the dwell time for each screen on the configuration menu before enabling the auto-switch.
  Menu>Configuration>Live View>Dwell Time.
- **Start Recording:** continuous record and motion detection record are supported.
- **Output Mode:** select the output mode to Standard, Bright, Gentle or Vivid.
- **Add IP Camera:** the shortcut to the IP camera management interface.
- **Playback:** playback the recorded videos for current day.

3.2.1 Front Panel Operation on Live View

Table 3. 2 Front Panel Operation in Live View

Functions	Front Panel Operation
Show single screen	Press the corresponding Alphanumeric button. E.g. Press 2 to display only the screen for channel 2.
Show multi-screen	Press the **PREV/FOCUS-** button.
Manually switch screens	Next screen: right/down direction button. Previous screen: left/up direction button.
Auto-switch	Press **Enter** button.
Playback	Press **Play** button.

3.2.2 Using the Mouse in Live View

Table 3. 3 Mouse Operation in Live View

Name	Description
Menu	Enter the main menu of the system by right clicking the mouse.
Single Screen	Choose from menu.
Multi-screen	Choose from menu.
Previous Screen arrow	Switch to the previous screen.
Next Screen arrow	Switch to the next screen.
Start/Stop Auto-switch	Enable/disable the auto-switch of the screens.
Start Recording	Start continuous recording or motion detection recording of all channels.
Add IP Camera	Enter the IP Camera Management interface, and manage the cameras.
Playback	Enter the playback interface and start playing back the video of the selected channel immediately.

Name	Description
Output Mode	Four modes of output supported, including Standard, Bright, Gentle and Vivid.

Note:

- The *dwell time* of the live view configuration must be set before using **Start Auto-switch**.
- If the corresponding camera supports intelligent function, the Reboot Intelligence option is included when right-clicking mouse on this camera.

Figure 3. 1 Right-click Menu

3.2.3 Quick Setting Toolbar in Live View Mode

On the screen of each channel, there is a quick setting toolbar which shows when you single click the mouse in the corresponding screen.

Figure 3. 2 Quick Setting Toolbar

Table 3. 4 Description of Quick Setting Toolbar Icons

Icon	Description	Icon	Description	Icon	Description
/	Enable/Disable Manual Record		Instant Playback	/	Mute/Audio on
	PTZ Control		Digital Zoom		Image Settings
	Live View Strategy		Close		

Instant Playback only shows the record in last five minutes. If no record is found, it means there is no record during the last five minutes.

Digital Zoom can zoom in the selected area to the full screen. You can left-click and draw to select the area to zoom in, as shown in Figure 3. 3.

Figure 3. 3 Digital Zoom

Image Settings icon can be selected to enter the Image Settings menu.

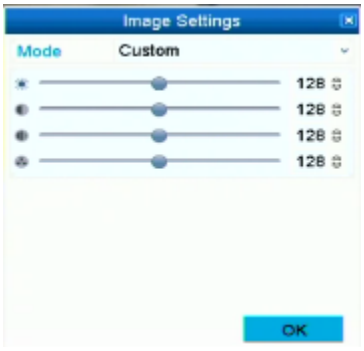


Figure 3. 4 Image Settings- Preset

You can set the image parameters like brightness, contrast, saturation and hue.

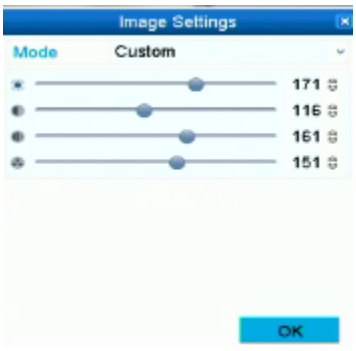


Figure 3. 5 Image Settings- Customize

Live View Strategy can be selected to set strategy, including Real-time, Balanced, Fluency.

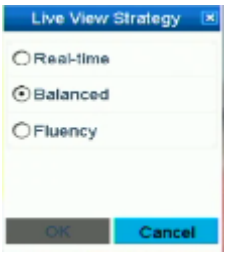


Figure 3. 6 Live View Strategy

3.3 Adjusting Live View Settings

Purpose:

Live View settings can be customized according to different needs. You can configure the output interface, dwell time for screen to be shown, mute or turning on the audio, the screen number for each channel, etc.

Steps:

1. Enter the Live View Settings interface.

   Menu> Configuration> Live View

Figure 3. 7 Live View-General

The settings available in this menu include:

- **Video Output Interface:** Designates the output to configure the settings for, and only VGA/ HDMI™ is selectable by default.
- **Live View Mode:** Designates the display mode to be used for Live View.
- **Dwell Time:** The time in seconds to *dwell* between switching of channels when enabling auto-switch in Live View.
- **Enable Audio Output:** Enables/disables audio output for the selected video output.
- **Event Output:** Designates the output to show event video.
- **Full Screen Monitoring Dwell Time:** The time in seconds to show alarm event screen.

2. Setting Cameras Order

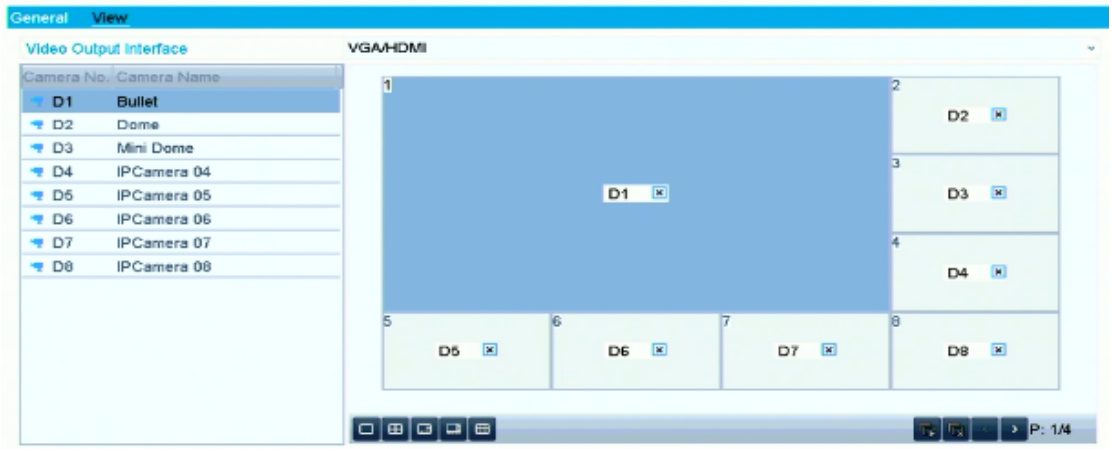


Figure 3. 8 Live View- Camera Order

1) Select a **View** mode in .

2) Select the small window, and double-click on the channel number to display the channel on the window.

   If you do not want the camera to be displayed on the live view interface, click the corresponding

to stop it.

You can also click button to start live view for all the channels and click to stop all the live view.

3) Click the **Apply** button to save the setting.

3.4 User Logout

Purpose:

After logging out, the monitor turns to the live view mode and if you want to do some operation, you need to enter user name and password tog in again.

Steps:

1. Enter the Shutdown menu.

   Menu>Shutdown

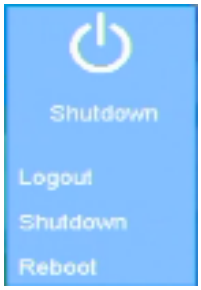


Figure 3. 9 Shutdown

2. Click **Logout**.

   Note:

   After you have logged out the system, menu operation on the screen is invalid. It is required to input a user name and password to unlock the system.

Chapter 4 Recording Settings

4.1 Configuring Parameters

Purpose:

By configuring the parameters you can define the parameters which affect the image quality, such as the transmission stream type, the resolution and so on.

Before you start:

1. Make sure that the HDD has already been installed. If not, please install a HDD and initialize it. (Menu>HDD>General)

Figure 4. 1 HDD- General

2. Check the storage mode of the HDD.
   1) Click **Advanced** to check the storage mode of the HDD.
   2) If the HDD mode is *Quota*, please set the maximum record capacity For detailed information, see *Chapter* 9.4 *Configuring Quota Mode*.
   3) If the HDD mode is **Group**, you should set the HDD group. For detailed information, see *Chapter 9.3 Configuring HDD Group for Recording*.

Figure 4. 2 HDD- Advanced

Steps:

1. Enter the Record settings interface to configure the recording parameters:
   Menu>Record>Parameters

Figure 4. 3 Recording Parameters

2. Parameters Setting for Recording

1) Select **Record** tab page to configure. You can configure the stream type, the resolution, and other parameters on your demand.

- **Pre-record:** The time you set to record before the scheduled time or event. For example, when an alarm triggered the recording at 10:00, if you set the pre-record time as 5 seconds, the camera records it at 9:59:55.
- **Post-record:** The time you set to record after the event or the scheduled time. For example, when an alarm triggered the recording ends at 11:00, if you set the post-record time as 5 seconds, it records till 11:00:05.
- **Expired Time:** The expired time is the longest time for a record file to be kept in the HDD, if the deadline is reached, the file will be deleted. You can set the expired time to 0, and then the file will not be deleted. The actual keeping time for the file should be determined by the capacity of the HDD.
- **Redundant Record:** Enabling redundant record means you save the recording files in the redundant HDD. See Chapter Configuring Redundant Recording.
- **Record Audio:** Check the checkbox to enable or disable audio recording.
- **Video Stream:** Main stream and sub-stream are selectable for recording. When you select sub-stream, you can record for a longer time with the same storage space.

2) Click **Apply** to save the settings.

Note:

- The redundant record is to decide whether you want the camera to save the recording files in the redundant HDD. You must configure the redundant HDD in HDD settings.
- The parameters of Main Stream (Event) are read-only.

3. Parameters Settings for Sub-stream

1) Enter the Sub-stream tab page.

Figure 4. 4 Sub-stream Parameters

2) Configure the parameters of the camera.
3) Click **Apply** to save the settings.

4.2 Configuring Recording Schedule

Purpose:

Set the recording schedule, and then the camera automatically starts/stops recording according to the configured schedule.

Steps:

1. Enter the Record Schedule interface.

   Menu>Record>Schedule

2. Configure Record Schedule

   1) Select Record Schedule.

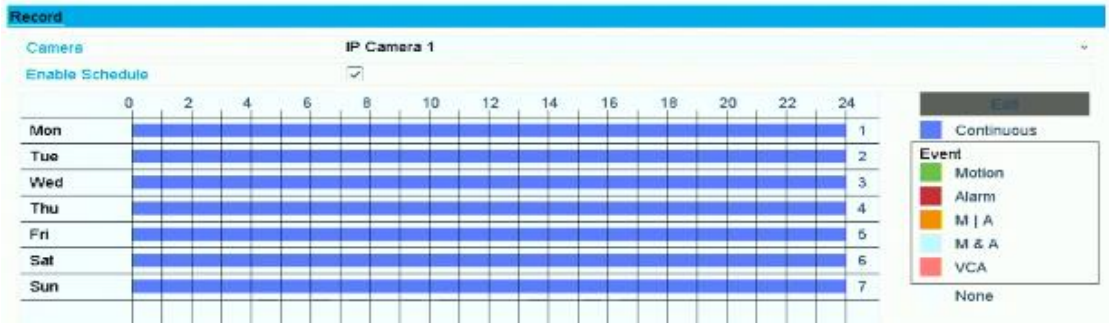


Figure 4. 5 Record Schedule

   2) Choose the camera you want to configure.

   3) Select the check box after the **Enable Schedule** item.

   4) Click **Edit** button or click on the color icon under the edit button and draw the schedule line on the panel.

   Edit the schedule:

   I. In the message box, you can choose the day to which you want to set schedule.

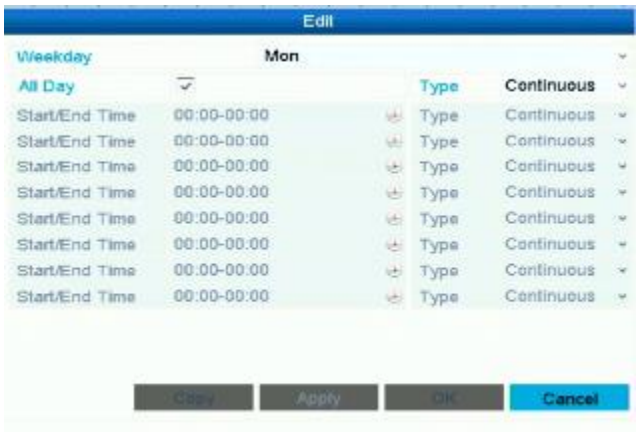


Figure 4. 6 Recording Schedule Interface

   You can click the button to set the accurate time of the schedule.

   II. To schedule an all-day recording, check the checkbox after the **All Day** item.

Figure 4. 7 Edit Schedule

III. To arrange other schedule, leave the **All Day** checkbox blank and set the Start/End time.

Note:

Up to 8 periods can be configured for each day. And the time periods cannot be overlapped each other.

IV. Select the record type in the dropdown list.

Note:

- To enable Motion, Alarm, M | A (motion or alarm), M & A (motion and alarm) and VCA (Video Content Analysis) triggered recording and capture, you must configure the motion detection settings, alarm input settings or VCA settings as well. For detailed information, refer to *Chapter 7.1*, *Chapter 7.2 and Chapter 7.5*.
- The VCA settings are only available to the smart IP cameras.

Repeat the above edit schedule steps to schedule recording for other days in the week. If the schedule can also be applied to other days, click **Copy**.

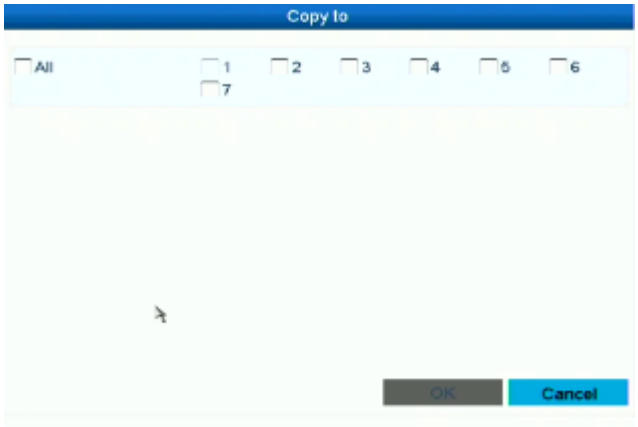


Figure 4. 8 Copy Schedule to Other Days

V. Click **OK** to save setting and back to upper level menu.

VI. Click **Apply** in the Record Schedule interface to save the settings.

Draw the schedule:

I. Click on the color icons, you can choose the schedule type as continuous or event.

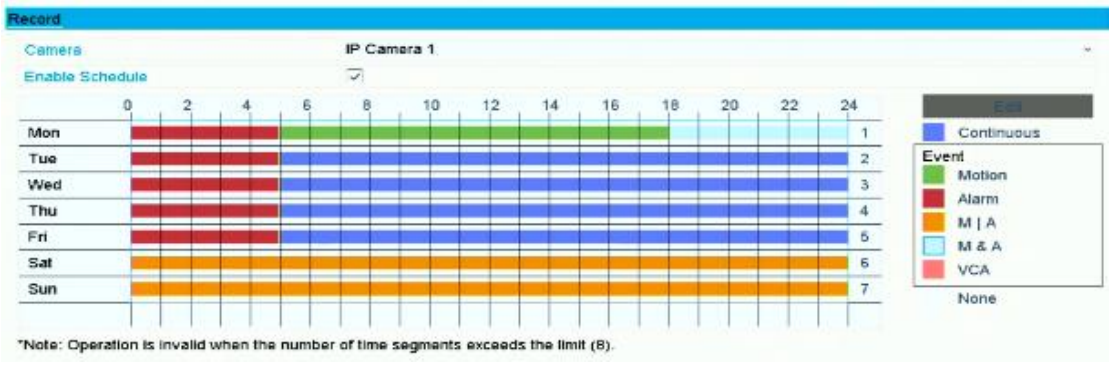


Figure 4. 9 Draw the Schedule

Descriptions of the color icons are shown in the figure below.

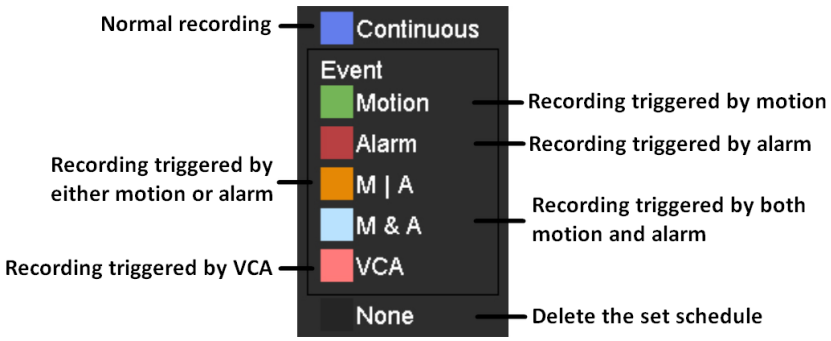


Figure 4. 10 Descriptions of the color icons

II. Click the **Apply** button to validate the settings.

3. (Optional) If the settings can also be used to other channels, click **Copy**, and then choose the channel to which you want to copy.

4. Click **Apply** to save the settings.

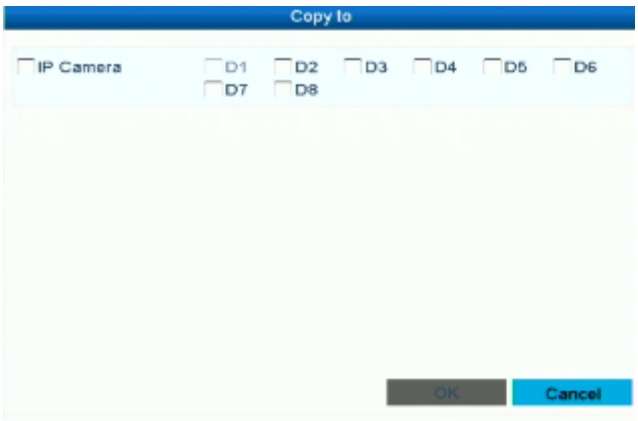


Figure 4. 11 Copy Schedule to Other Channels

4.3 Configuring Motion Detection Recording

Purpose:

Follow the steps to set the motion detection parameters. In the live view mode, once a motion detection event takes place, the NVR can analyze it and do many actions to handle it. Enabling motion detection function can trigger certain channels to start recording, or trigger full screen monitoring, audio warning, notify the surveillance center and so on. In this chapter, you can follow the steps to schedule a record which triggered by the detected motion.

Steps:

1. Enter the Motion Detection interface.

   Menu>Camera>Motion

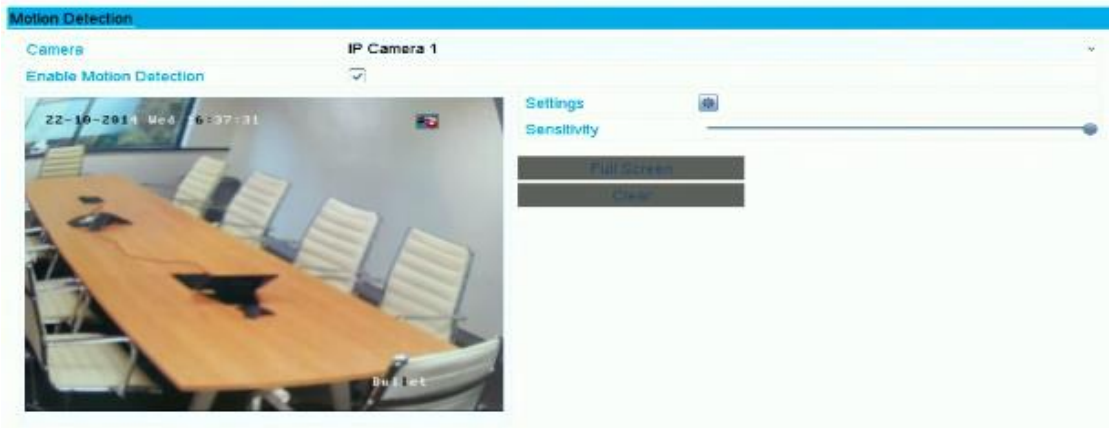


Figure 4. 12 Motion Detection

2. Configure Motion Detection：

   1) Choose camera you want to configure.
   2) Check the checkbox after **Enable Motion Detection**.
   3) Drag and draw the area for motion detection by mouse. If you want to set the motion detection for all the area shot by the camera, click **Full Screen**. To clear the motion detection area, click **Clear**.

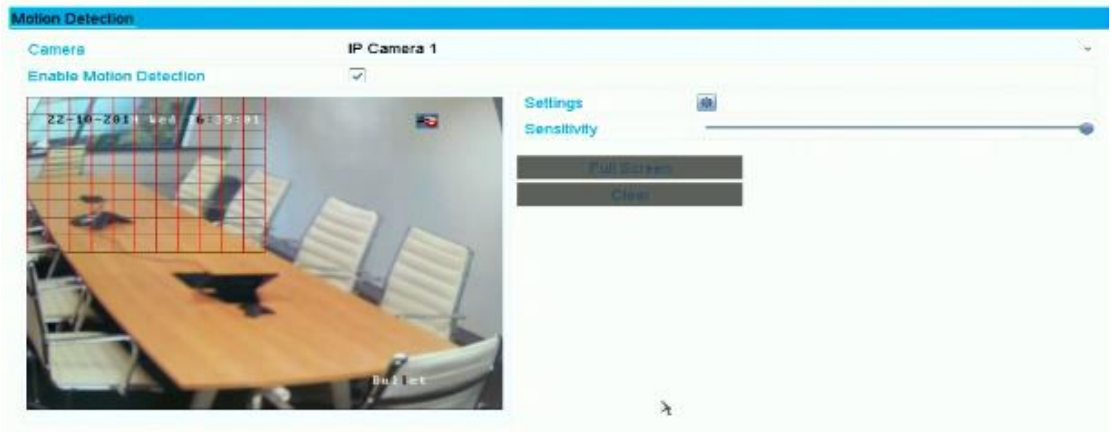


Figure 4. 13 Motion Detection- Mask

   4) Click **Settings**, and the message box for channel information pop up.

Figure 4. 14 Motion Detection Handling

5) Select the channels which you want the motion detection event to trigger recording.
6) Click **Apply** to save the settings.
7) Click **OK** to back to the upper level menu.
8) Exit the Motion Detection menu.

3. Edit the Motion Detection Record Schedule. For the detailed information of schedule configuration, see *Chapter 4.2 Configuring Recording Schedule.*

4.4 Configuring Alarm Triggered Recording

Purpose:

Follow the procedure to configure alarm triggered recording.

Steps:

1. Enter the Alarm setting interface.
   Menu> Configuration> Alarm

2. Click **Alarm Input** tab and set the alarm parameters.

   1) Select Alarm Input number and configure alarm parameters.
   2) Choose N.O (normally open) or N.C (normally closed) for alarm type.
   3) Check the checkbox for Enable.
   4) Click **Settings**.
   5) Choose the alarm triggered recording channel.
   6) Check the checkbox to select channel.
   7) Click **Apply** to save settings.
   8) Click **OK** to back to the upper level menu.

   Repeat the above steps to configure other alarm input parameters.

   If the settings can also be applied to other alarm inputs, click **Copy** and choose the alarm input number.

3. Edit the Alarm triggered record in the Record Schedule setting interface. For the detailed information of schedule configuration, see *Chapter Configuring Recording Schedule.*

4.5 Configuring VCA Triggered Recording

Purpose:

Perform the following steps to set the VCA alarm and trigger recording of related cameras.

Steps:

1. Enter VCA Alarm interface of Camera Management and select a camera you want to detect VCA alarm.

   Menu> Camera> VCA

   Note:

   The selected camera must support the VCA function.

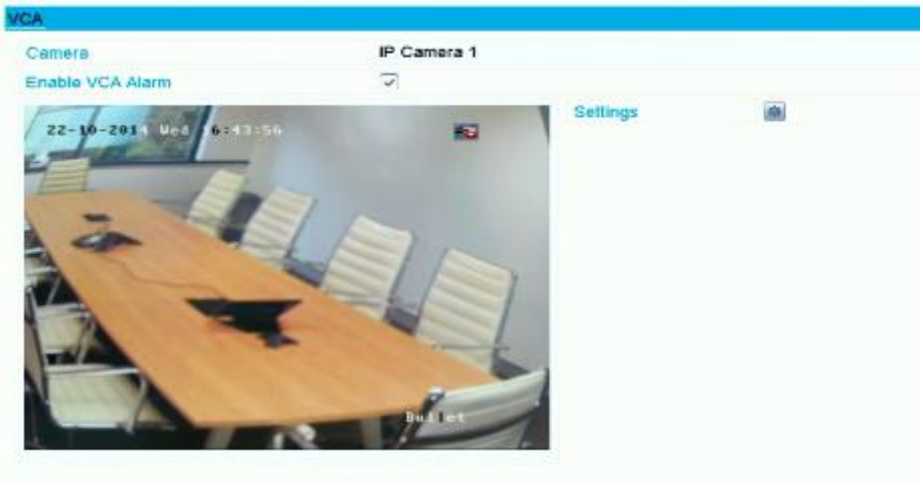


Figure 4. 15 VCA Alarm Setting Interface

2. Check the **Enable VCA Alarm** checkbox and click **Settings** button to set up its alarm response actions.

Figure 4. 16 VCA Alarm Handling

3. Select the channels which you want the motion detection event to trigger recording.
4. Click **Apply** to save the settings.
5. Edit the VCA Alarm Record Schedule. For the detailed information of schedule configuration, see *Chapter Configuring Recording Schedule.*

4.6 Manual Recording

Purpose:

Follow the steps to set parameters for the manual record. Using manual record, you need to manually cancel the record. The manual recording is prior to the scheduled recording.

Steps:

1. Enter the Manual settings interface.

   Menu> Manual

   Or press the **REC/SHOT** button on the front panel.

Figure 4. 17 Manual Record

2. Enable the Manual Record.

   1) Select **Record** on the left bar.

   2) Click the status button before camera number to change to.

3. Disable manual record.

   Click the status button to change to.

   Note:

   Green icon ON means that the channel is configured the record schedule. After rebooting, all the manual records enabled will be canceled.

4.7 Configuring Holiday Recording

Purpose:

Follow the steps to configure the record schedule on holiday for that year. You may want to have different plan for recording on holiday.

Steps:

1. Enter the Record setting interface.

   Menu > Record > Holiday

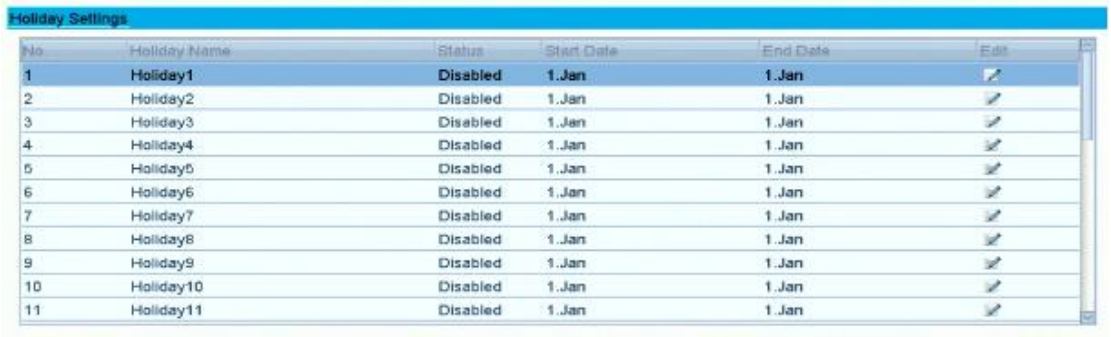


Figure 4. 18 Holiday Settings

2. Enable Edit Holiday schedule.

   1) Click to enter the Edit interface.

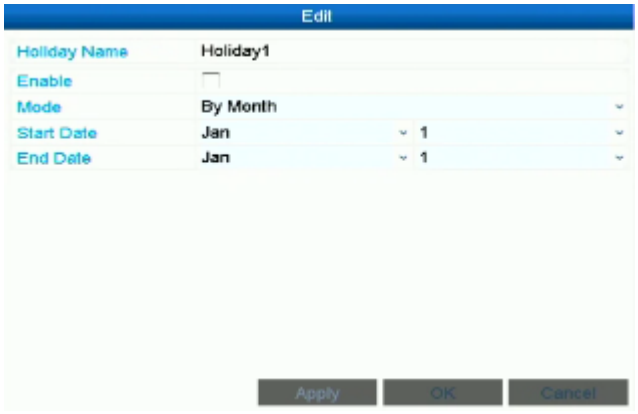


Figure 4. 19 Edit Holiday Settings

   2) Check the checkbox after **Enable Holiday**.
   3) Select Mode from the dropdown list.

      There are three different modes for the date format to configure holiday schedule.
   4) Set the start and end date.
   5) Click **Apply** to save settings.
   6) Click **OK** to exit the Edit interface.

3. Enter Record Schedule settings interface to edit the holiday recording schedule. See *Chapter 6.2 Configuring Recording Schedule.*

4.8 Configuring Redundant Recording

Purpose:

Enabling redundant recording, which means saving the recording files not only in the R/W HDD but also in the redundant HDD, will effectively enhance the data safety and reliability. .

Steps:

1. Enter HDD Information interface.

   Menu> HDD

Figure 4. 20 HDD General

2. Select the **HDD** and click to enter the Local HDD Settings interface.
   1) Set the HDD property to Redundancy.
   2) Click **Apply** to save the settings.
   3) Click **OK** to back to the upper level menu.

Note:

You must set the Storage mode in the HDD advanced settings to Group before you set the HDD property to Redundant. For detailed information, please refer to *Chapter 10.3.1 Setting HDD Property*. There should be at least another HDD which is in Read/Write status.

3. Enter the Record setting interface.

   Menu> Record> Parameters

   1) Select **Record** tab**.**

Figure 4. 21 Record Parameters

   2) Select Camera you want to configure in the drop-down list.
   3) Check the checkbox of **Redundant Record**.
   4) Click **OK** to save settings and back to the upper level menu.

   Repeat the above steps for configuring other channels.

4.9 Configuring HDD Group for Recording

Purpose:

You can group the HDDs and save the record files in certain HDD group.

Steps:

1. Enter HDD setting interface.

   Menu>HDD

Figure 4. 22 HDD General

2. Select **Advanced** on the left side menu.

Figure 4. 23 Storage Mode

   Check whether the storage mode of the HDD is Group. If not, set it to Group. For detailed information, please refer to *Chapter 11.4 Managing HDD Group*.

3. Select **General** in the left side menu.
4. Click to enter editing interface.
5. Configuring HDD group.
   1) Choose a group number for the HDD group.
   2) Click **Apply** and then in the pop-up message box, click **Yes** to save your settings.
   3) Click **OK** to back to the upper level menu.

      Repeat the above steps to configure more HDD groups.
6. Choose the Channels which you want to save the record files in the HDD group.
   1) Select **Advanced** on the left bar.
   2) Choose Group number in the dropdown list of **Record on HDD Group**
   3) Check the channels you want to save in this group.
   4) Click **Apply** to save settings.

   Note:

   After having configured the HDD groups, you can configure the Recording settings following the procedure provided in *Chapter 5.2-5.7*.

4.10 Files Protection

Purpose:

You can lock the recorded files or set the HDD property to Read-only to protect the record files from being overwritten.

Protect file by locking the record files:

Steps:

1. Enter Export setting interface.

   Menu> Export

Figure 4. 24 Export

2. Select the channels you want to investigate by checking the checkbox to .
3. Configure the record type, file type start/end time.
4. Click **Search** to show the results.

Figure 4. 25 Export- Search Result

5. Protect the record files.

   1) Find the record files you want to protect, and then click the icon which will turn to, indicating that the file is locked.

      Note:

      The record files of which the recording is still not completed cannot be locked.

   2) Click to change it to to unlock the file and the file is not protected.

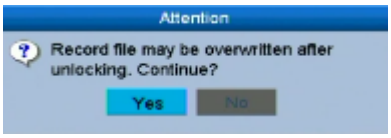


Figure 4. 26 Unlocking Attention

Protect file by setting HDD property to Read-only

Steps:

1. Enter HDD setting interface.

   Menu> HDD

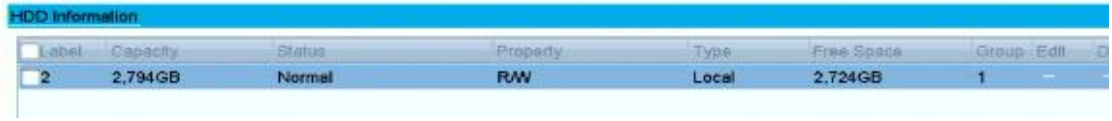


Figure 4. 27 HDD General

2. Click to edit the HDD you want to protect.

   Note:

   To edit HDD property, you need to set the storage mode of the HDD to Group. See *Chapter Managing HDD Group.*

3. Set the HDD property to Read-only.
4. Click **OK** to save settings and back to the upper level menu.

   Note:

   - You cannot save any files in a Read-only HDD. If you want to save files in the HDD, change the property to R/W.
   - If there is only one HDD and is set to Read-only, the NVR can't record any files. Only live view mode is available.
   - If you set the HDD to Read-only when the NVR is saving files in it, then the file will be saved in next R/W HDD. If there is only one HDD, the recording will be stopped.

Chapter 5 Playback

5.1 Playing Back Record Files

5.1.1 Playing Back by Channel

Purpose:

Play back the recorded video files of a specific channel in the live view mode. Channel switch is supported.

Instant playback by channel

Steps:

Choose a channel in live view mode using the mouse and click the button in the quick setting toolbar.

Note:

In the instant playback mode, only record files recorded during the last five minutes on this channel will be played back.

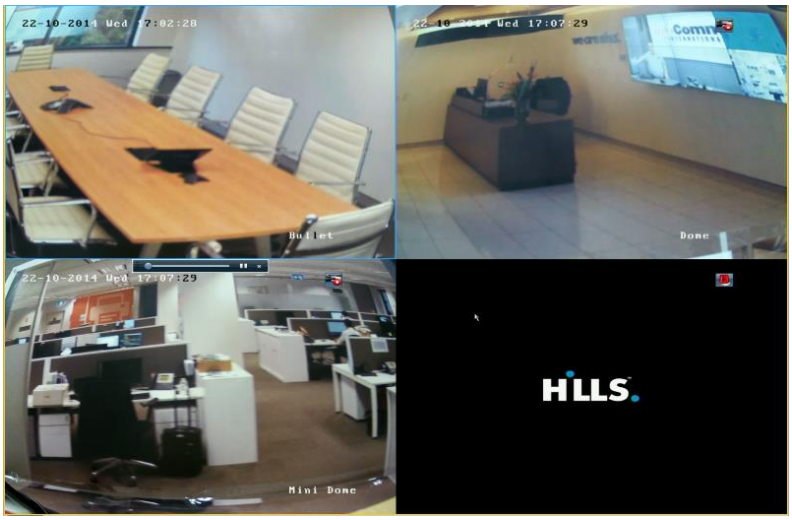


Figure 5. 1 Instant Playback Interface

Playback by channel

1. Enter the Playback interface.

   Mouse: right click a channel in live view mode and select Playback from the menu, as shown in Figure 5. 2.

Figure 5. 2 Right-click Menu under Live View

Front Panel: press **PLAY** button to play back record files of the channel under single-screen live view mode.

Note:

Pressing numerical buttons will switch playback to the corresponding channels during playback process.

2. Playback management.

The toolbar in the bottom part of Playback interface can be used to control playing progress, as shown in Figure 5. 3.

Figure 5. 3 Playback Interface

Click the channel(s) to execute simultaneous playback of multiple channels.

Figure 5. 4 Toolbar of Playback

Note:

The 03-17-2014 17:08:35 -- 03-27-2014 16:12:11 indicates the start/end time of the record.

Table 5. 1 Detailed Explanation of Playback Toolbar

Button	Operation	Button	Operation	Button	Operation
	Audio on/ Mute		Start/Stop clipping		30s forward
	30s reverse		Add default tag		Add customized tag
	Tag management		Speed down		Pause reverse play/ Reverse play/ Single-frame reverse play
	Pause play/ Play/ Single-frame play		Scaling up/down the time line		Speed up
	Previous day		Next day		Full Screen

Button	Operation	Button	Operation	Button	Operation
	Exit		Stop		Digital Zoom
	Save the clips		Process bar	Normal	Video type

Note:

Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate special frames.

5.1.2 Playing Back by Time

Purpose:

Play back video files recorded in specified time duration. Multi-channel simultaneous playback and channel switch are supported.

Steps:

1. Enter playback interface.
   Menu>Playback
2. Check the checkbox of channel(s) in the channel list and then double-click to select a date on the calendar.

Figure 5. 5 Playback Calendar

Note:

If there are record files for that camera in that day, in the calendar, the icon for that day is displayed as 9. Otherwise it is displayed as 9.

In the Playback interface:

The toolbar in the bottom part of Playback interface can be used to control playing process, as shown in Figure 5. 6.

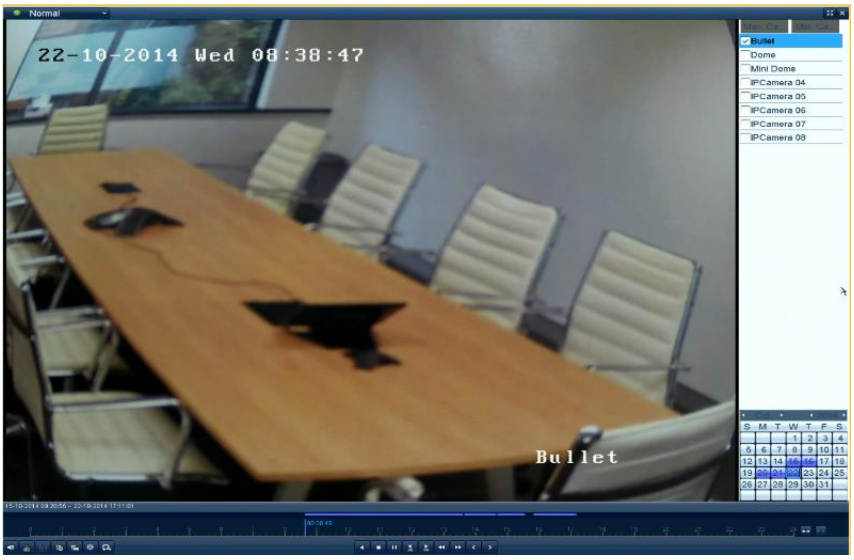


Figure 5. 6 Interface of Playback by Time

Figure 5. 7 Toolbar of Playback by Time

Note:

The 03-17-2014 17:08:35 -- 03-27-2014 16:12:11 indicates the start/end time of the record.

Table 5. 2 Detailed Explanation of Playback-by-time Interface

Button	Operation	Button	Operation	Button	Operation
	Audio on/ Mute		Start/Stop clipping		30s forward
	30s reverse		Add default tag		Add customized tag
	Tag management		Speed down		Pause reverse play/ Reverse play/ Single-frame reverse play
	Pause play/ Play/ Single-frame play		Scaling up/down the time line		Speed up
	Previous day		Next day		Full Screen
	Exit		Stop		Digital Zoom
	Save the clips		Process bar	Normal	Video type

Note:

Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate specific frames.

5.1.3 Playing Back by Event Search

Purpose:

Play back record files on one or several channels searched out by restricting event type (e.g. alarm input and motion detection).

Steps:

1. Enter the Playback interface.
   Menu>Playback
2. Select the **Event** in the drop-down list on the top-left side.
3. Select **Alarm Input**, **Motion** or **VCA** as the event type, edit the Start time and End time.
   Note:
   Here we take playback by motion as the example.

Figure 5. 8 Motion Search Interface

4. Click **Search** button to get the search result information. You may refer to the right-side bar for the result.

Figure 5. 9 Search Result Bar

5. Click button to play back the file.

   You can click the **Back** button to back to the search interface.

   Note:

   Pre-play and post-play can be configured.

6. Playback interface.

   The toolbar in the bottom part of Playback interface can be used to control playing process.

Figure 5. 10 Interface of Playback by Event

Figure 5. 11 Toolbar of Playback by Event

Table 5. 3 Detailed Explanation of Playback-by-event Toolbar

Button	Operation	Button	Operation	Button	Operation
	Audio on/ Mute		Start/Stop clipping		30s forward
	30s reverse		Add default tag		Add customized tag
	Tag management		Speed down		Pause reverse play/ Reverse play/ Single-frame reverse play
	Pause play/ Play/ Single-frame play		Scaling up/down the time line		Speed up
	Previous day		Next day		Full Screen
	Exit		Stop		Digital Zoom
	Save the clips		Process bar	Event	Video type

Note:

Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate specific frames.

5.1.4 Playing Back by Tag

Purpose:

Video tag allows you to record related information like people and location of a certain time point during playback. You are also allowed to use video tag(s) to search for record files and position time point.

Before playing back by tag:

1. Enter Playback interface.
   Menu>Playback
2. Search and play back the record file(s). Refer to *Chapter 5.1.1* for the detailed information about searching and playback of the record files.

Figure 5. 12 Interface of Playback by Time

Click button to add default tag.

Click button to add customized tag and input tag name.

Note:

Max. 64 tags can be added to a single video file.

3. Tag management.
   Click button to check, edit and delete tag(s).

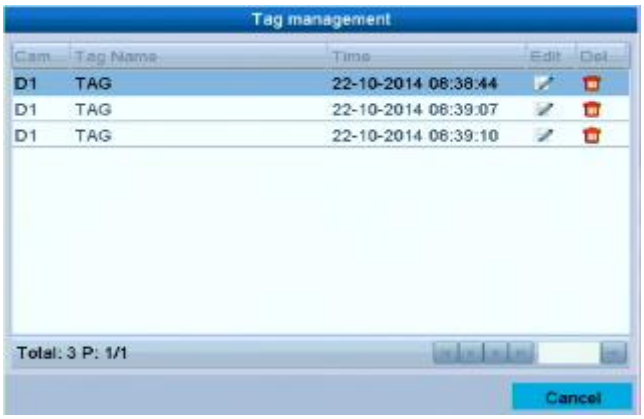


Figure 5. 13 Tag Management Interface

Steps:

1. Select the **Tag** from the drop-down list in the Playback interface.
2. Choose channels, edit start time and end time, and then click Search to enter Search Result interface.

   Note:

   You can enter keyword in the textbox to search the tag on your command.

Figure 5. 14 Video Search by Tag

3. Click button to play back the file.

   You can click the **Back** button to back to the search interface.

   Note:

   Pre-play and post-play can be configured.

Figure 5. 15 Interface of Playback by Tag

Figure 5. 16 Toolbar of Playback by Tag

Table 5. 4 Detailed Explanation of Playback-by-tag Toolbar

Button	Operation	Button	Operation	Button	Operation
	Audio on/ Mute		Start/Stop clipping		30s forward
	30s reverse		Add default tag		Add customized tag
	Tag management		Speed down		Pause reverse play/ Reverse play/ Single-frame reverse play
	Pause play/ Play/ Single-frame play		Scaling up/down the time line		Speed up
	Previous day		Next day		Full Screen
	Exit		Stop		Digital Zoom
	Save the clips		Process bar	Tag	Video type

Note:

Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate special frames.

5.1.5 Smart Playback

Purpose:

The smart playback function provides an easy way to get through the less effective information. When you select the smart playback mode, the system will analyze the video containing the motion or VCA information, mark it with green color and play it in the normal speed while the video without motion will be played in the 16-time speed. The smart playback rules and areas are configurable.

Before you start:

To get the smart search result, the corresponding event type must be enabled and configured on the IP camera. Here we take the intrusion detection as an example.

1. Log in the IP camera by the web browser, and enable the intrusion detection by checking the checkbox of it. You may enter the motion detection configuration interface by Configuration> Advanced Configuration> Events> Intrusion Detection.

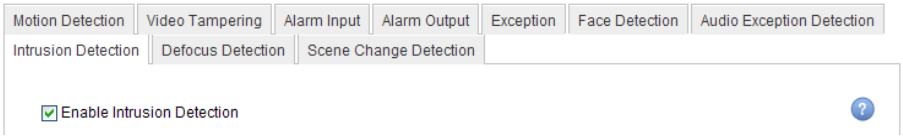


Figure 5. 17 Setting Intrusion Detection on IP Camera

2. Configure the required parameters of intrusion detection, including area, arming schedule and linkage methods. Refer to the user manual of smart IP camera for detailed instructions.

Steps:

1. Enter Playback interface.
   Menu>Playback
2. Select the **Smart** in the drop-down list on the top-left side.

Figure 5. 18 Smart Playback Interface

Table 5. 5 Detailed Explanation of Smart Playback

Button	Operation	Button	Operation	Button	Operation
	Smart search		Stop	/	Pause play / Play
	Process bar	/	Scaling up/down the time line	Smart	Playback type

3. Select a camera in the camera list and select a date in the calendar.
4. Edit the smart search areas and rules.

1) Click the button to enter the search area editing interface; the smart search area is set as full screen by default.

Figure 5. 19 Draw Area of Smart Search

2) Set the rules and areas.

Intrusion Detection

Click the button, and then specify 4 points to set a quadrilateral region for intrusion detection.

Note:

Only one region can be set.

Motion Detection

i. Click the to set the search area manually.

ii. Click and drag the mouse to draw target searching area(s), or click the button to set the full screen as the area.

3) Click the to search, and then the result will be displayed as in the progress bar of the Smart Playback interface.

Or you can click the button to clear all the set areas.

5. Click the button to play.

Figure 5. 20 Smart Search Result

Note:

Playback progress bar: use the mouse to click any point of the progress bar to locate specific frames.

5.1.6 Playing Back by System Logs

Purpose:

Play back record file(s) associated with channels after searching system logs.

Steps:

1. Enter Log Information interface.

   Menu>Maintenance>Log Information

2. Click **Log Search** tab to enter Playback by System Logs.

   Set search time and type and click **Search** button.

System Log Search Interface

3. Choose a log with record file and click button to enter Playback interface.

Note:

If there is no record file at the time point of the log, the message box “No result found” will pop up.

Search Result
No.
Major Type
Time
Minor Type
Parameter
Play
Details
1 Operation 22-10-2014 08:37:46 Power On N/A
2 Information 22-10-2014 08:37:46 Local HDD Infor... N/A
3 Exception 22-10-2014 08:38:09 IP Camera Disco... N/A
4 Exception 22-10-2014 08:38:09 Video Loss Alarm N/A
5 Exception 22-10-2014 08:38:09 IP Camera Disco... N/A
6 Exception 22-10-2014 08:38:09 IP Camera Disco... N/A
7 Exception 22-10-2014 08:38:09 IP Camera Disco... N/A
8 Exception 22-10-2014 08:38:09 IP Camera Disco... N/A
9 Exception 22-10-2014 08:38:09 IP Camera Disco... N/A
10 Exception 22-10-2014 08:38:09 IP Camera Disco... N/A
11 Exception 22-10-2014 08:38:09 IP Camera Disco... N/A
12 Information 22-10-2014 08:38:14 HDD S.M.A.R.T. N/A
13 Information 22-10-2014 08:38:39 Start Recording N/A
14 Information 22-10-2014 08:38:39 Start Recording N/A
Total: 912 P: 1/10

Result of System Log Search

4. Playback interface.

The toolbar in the bottom part of Playback interface can be used to control playing process.

Interface of Playback by Log

5.1.7 Playing Back External File

Purpose:

Perform the following steps to look up and play back files in the external devices. ***Steps:***

1. Enter Tag Search interface.
   Menu>Playback
2. Select the **External File** in the drop-down list on the top-left side.
   The files are listed in the right-side list.
   You can click the Refresh button to refresh the file list.
3. Select and click the button to play back it. And you can adjust the playback speed by clicking and .

5.2 Auxiliary Functions of Playback

5.2.1 Playing Back Frame by Frame

Purpose:

Play video files frame by frame, in case of checking image details of the video when abnormal events happen.

Steps:

- **Using a Mouse:**

Go to Playback interface.

If you choose playback of the record file: click button until the speed changes to Single frame and one click on the playback screen represents playback of one frame.

If you choose reverse playback of the record file: click button until the speed changes to Single frame and one click on the playback screen represents reverse playback of one frame. It is also feasible to use button in toolbar.

- **Using the Front Panel:**

Rotate and hold the outer ring on Jog Shuttle counter clockwise or click the button to set the speed to Single frame. One click on button, one click on the playback screen or Enter button on the front panel represents playback or reverse playback of one frame.

5.2.2 Digital Zoom

Steps:

1. Click the button on the playback control bar to enter Digital Zoom interface.
2. Use the mouse to draw a red rectangle and the image within it will be enlarged up to 16 times.

Figure 5. 21 Draw Area for Digital Zoom

3. Right-click the image to exit the digital zoom interface.

5.2.3 Reverse Playback of Multi-channel

Purpose:

You can play back record files of multi-channel reversely. Up to 16-ch (with 1280*720 resolution) simultaneous reverse playback is supported; up to 4-ch (with 1920*1080P resolution) simultaneous reverse playback is supported and up to 1-ch (with 2560*1920 resolution) reverse playback is supported.

Steps:

1. Enter Playback interface.
   Menu>Playback
2. Check more than one checkboxes to select multiple channels and click to select a date on the calendar.

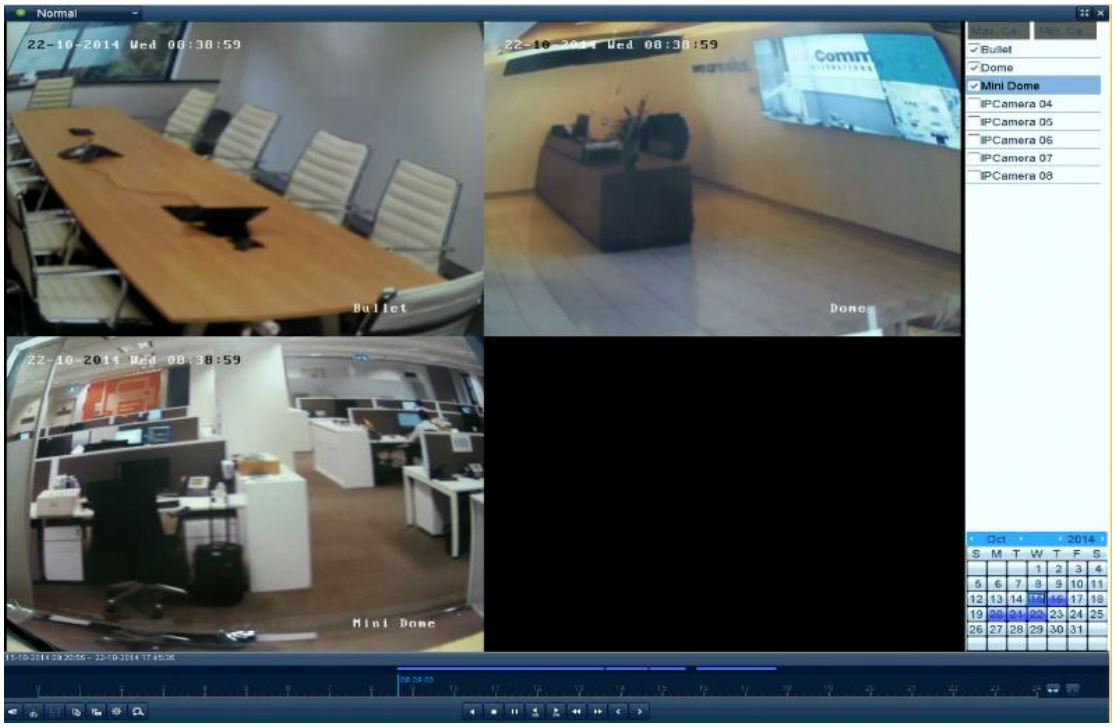


Figure 5. 22 4-ch Synchronous Playback Interface

3. Click to play back the record files reversely.

Chapter 6 Backup

6.1 Backing up Record Files

6.1.1 Quick Export

Purpose:

Export record files to backup device(s) quickly.

Steps:

1. Enter Video Export interface.

   Menu>Export>Normal

   Choose the channel(s) you want to back up and click **Quick Export** button.

   Note:

   The time duration of record files on a specified channel cannot exceed one day. Otherwise, the message box “Max. 24 hours are allowed for quick export.” will pop up.

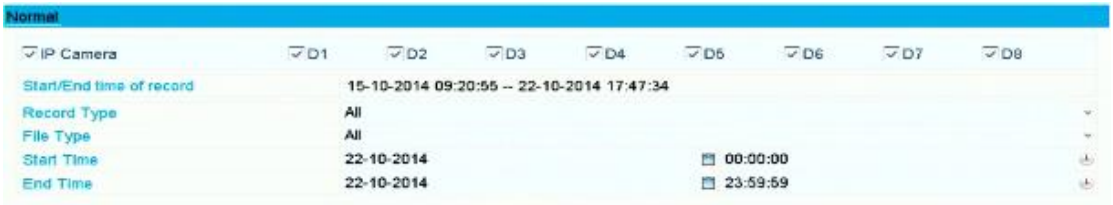


Figure 6. 1 Quick Export Interface

2. Click on the **Export** button to start exporting.

   Note:

   Here we use USB Flash Drive and please refer to the next section Normal Backup for more backup devices supported by the NVR.

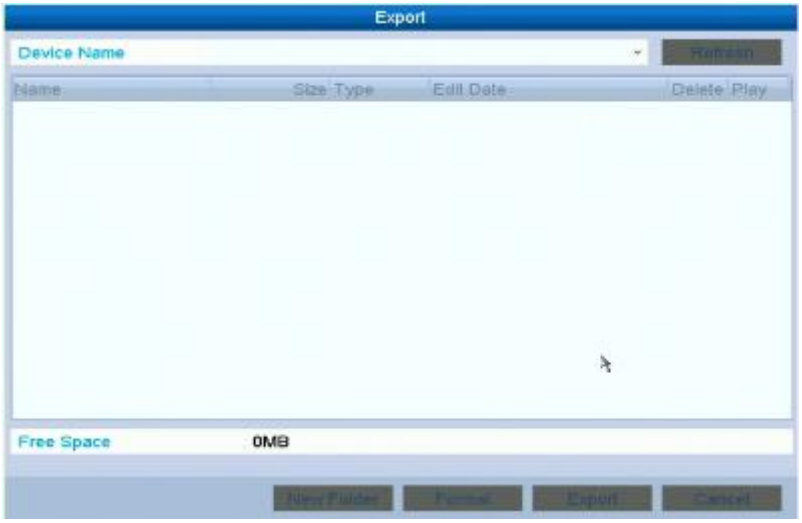


Figure 6. 2 Quick Export using USB1-1

Stay in the Exporting interface until all record files are exported.

3. Check backup result.

   Choose the record file in Export interface and click button to check it.

   Note:

   The Player player.exe will be exported automatically during record file export.

6.1.2 Backing up by Normal Video Search

Purpose:

The record files can be backup to various devices, such as USB devices (USB flash drives, USB HDDs, USB writer) and SATA writer.

Backup using USB flash drives and USB HDDs

Steps:

1. Enter Export interface.

   Menu>Export>Normal

2. Set search condition and click **Search** button to enter the search result interface.

Figure 6. 3 Normal Video Search for Backup

3. Select record files you want to back up.

   Click to play the record file if you want to check it.

   Check the checkbox before the record files you want to back up.

   Note:

   The size of the currently selected files is displayed in the lower-left corner of the window.

Figure 6. 4 Result of Normal Video Search for Backup

4. Export.

Click **Export All** button to export all the recording files.

Or you can select recording files you want to back up, and click **Export** button to enter Export interface.

Note:

If the inserted USB device is not recognized:

- Click the **Refresh** button.
- Reconnect device.
- Check for compatibility from vendor.

You can also format USB flash drives or USB HDDs via the device.

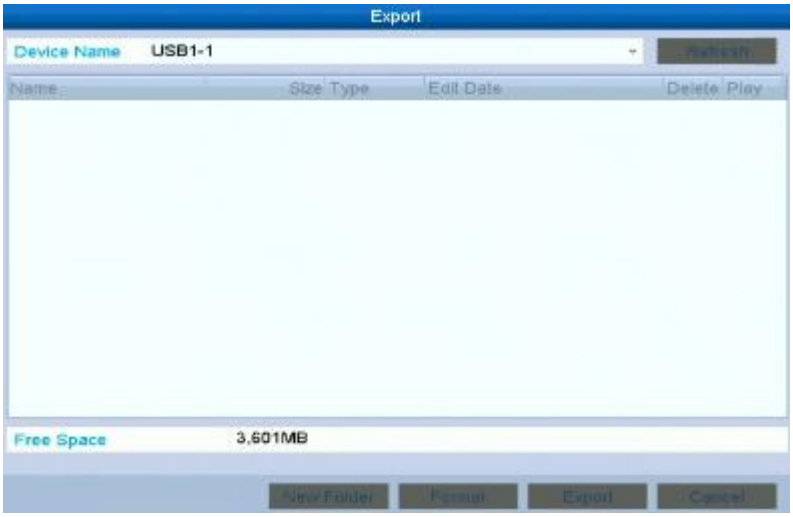


Figure 6. 5 Export by Normal Video Search using USB Flash Drive

Stay in the Exporting interface until all record files are exported with pop-up message box “Export finished”.

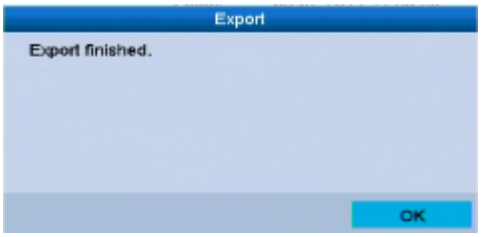


Figure 6. 6 Export Finished

5. Check backup result.

   Choose the record file in Export interface and click button to check it.

   Note:

   The Player player.exe will be exported automatically during record file export.

Figure 6. 7 Checkup of Export Result using USB Flash Drive

Backup using USB writer and SATA writer

Steps:

1. Enter Export interface.

   Menu>Export>Normal

2. Set search condition and click **Search** button to enter the search result interface.

Figure 6. 8 Normal Video Search for Backup

3. Select record files you want to back up.

   Click button to play the record file if you want to check it.

   Check the checkbox before the record files you want to back up.

   Note:

   The size of the currently selected files is displayed in the lower-left corner of the window.

Figure 6. 9 Result of Normal Video Search for Backup

4. Export.

Click **Export** button and start backup.

Note:

If the inserted USB writer or SATA writer is not recognized:

- Click the **Refresh** button.
- Reconnect device.
- Check for compatibility from vendor.

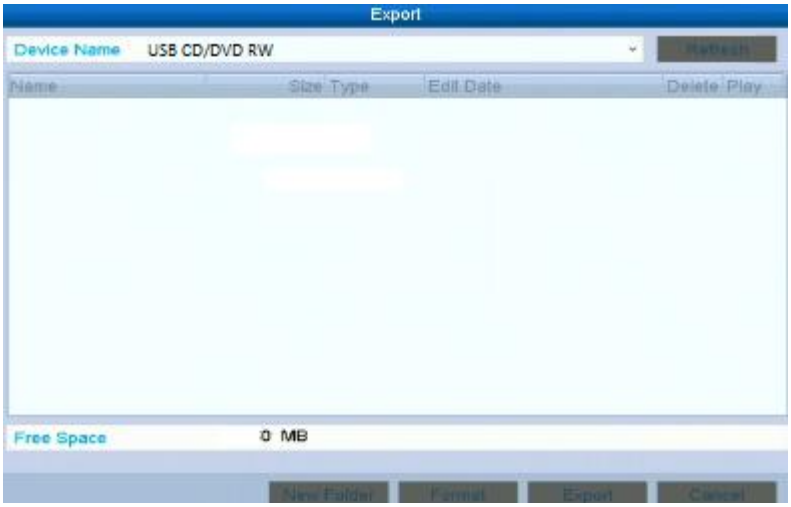


Figure 6. 10 Export by Normal Video Search using USB Writer

Stay in the Exporting interface until all record files are exported with pop-up message box “Export finished”.

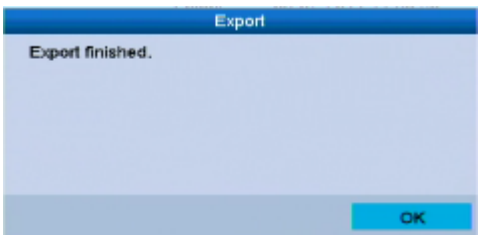


Figure 6. 11 Export Finished

5. Check backup result.

   Choose the record file in Export interface and click button to check it.

   Note:

   The Player player.exe will be exported automatically during record file export.

6.1.3 Backing up by Event Search

Purpose:

Back up event-related record files using USB devices (USB flash drives, USB HDDs, USB writer) and SATA writer. Quick Backup and Normal Backup are supported.

Steps:

1. Enter Export interface.

   Menu>Export>Event

   1) Select "Alarm Input" from the dropdown list of Event Type.
   2) Select the alarm input No. and time.
   3) Click **Search** button to enter the Search Result interface.

   Note:

   Event types contain Alarm Input, Motion and VCA.

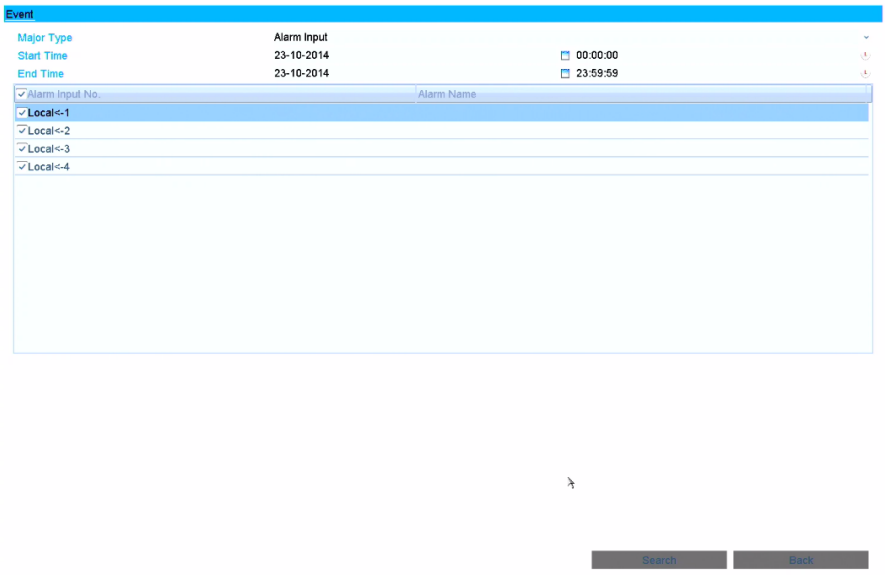


Figure 6. 12 Event Search for Backup

2. Select record files to export.

   1) Clicking **Quick Export** button will export record files of all channels triggered by the selected alarm input.

   2) Click **Details** button to view detailed information of the record file, e.g. start time, end time, file size, etc.

3. Export.

Click **Export All** button to export all the recording files.

Or you can select recording files you want to back up, and click **Export** button to enter Export interface.

Note:

If the inserted USB device is not recognized:

- Click the Refresh button.
- Reconnect device.
- Check for compatibility from vendor.

You can also format USB flash drive or USB HDDs via the device.

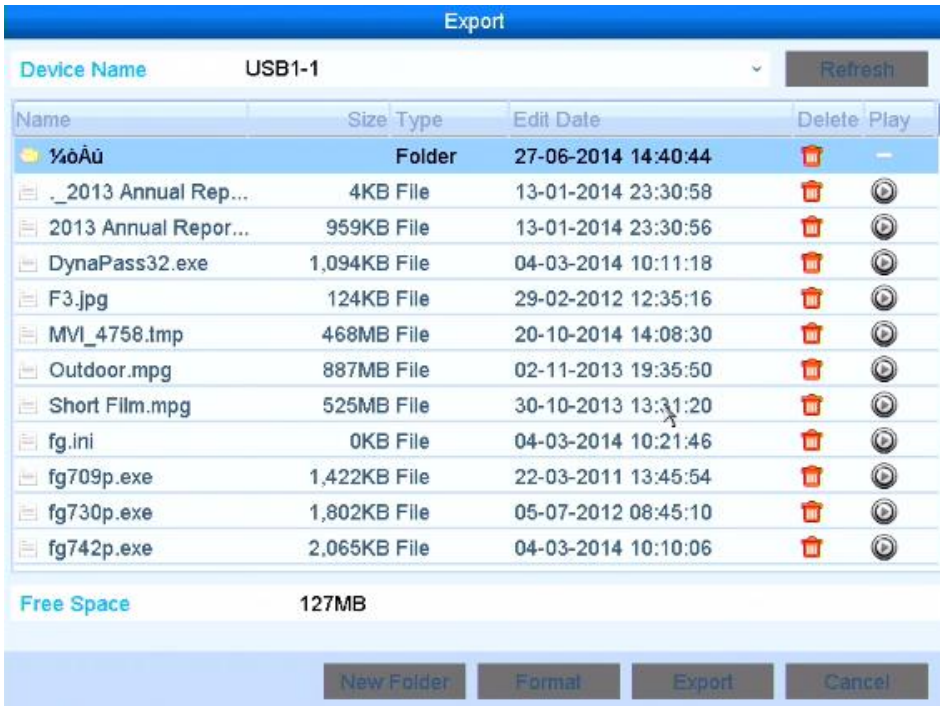


Figure 6. 13 Export by Event Using USB Flash Drive

Stay in the Exporting interface until all record files are exported with pop-up message “Export finished”.

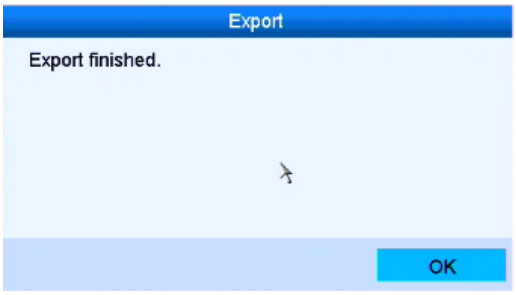


Figure 6. 14 Export Finished

4. Check backup result.

Note:

The Player player.exe will be exported automatically during record file export.

6.1.4 Backing up Video Clips

Purpose:

You may also select video clips to export directly during Playback, using USB devices (USB flash drives, USB HDDs, USB writer) or SATA writer.

Steps:

1. Enter Playback interface.

   Please refer to *Chapter 5.1 Playing Back Record Files.*

2. During playback, use buttons and in the playback toolbar to start or stop clipping record file(s).
3. Click the to save the video clips. Or the promption of saving clips will pop up when you quit the playback interface.

   Note:

   A maximum of 30 clips can be selected for each channel.

Figure 6. 15 Clips Export Interface

4. Export.

   Click **Export** button and start backup.

   Note:

   If the inserted USB device is not recognized:

   - Click the **Refresh** button.
   - Reconnect device.
   - Check for compatibility from vendor.

   You can also format USB flash drive or USB HDDs via the device.

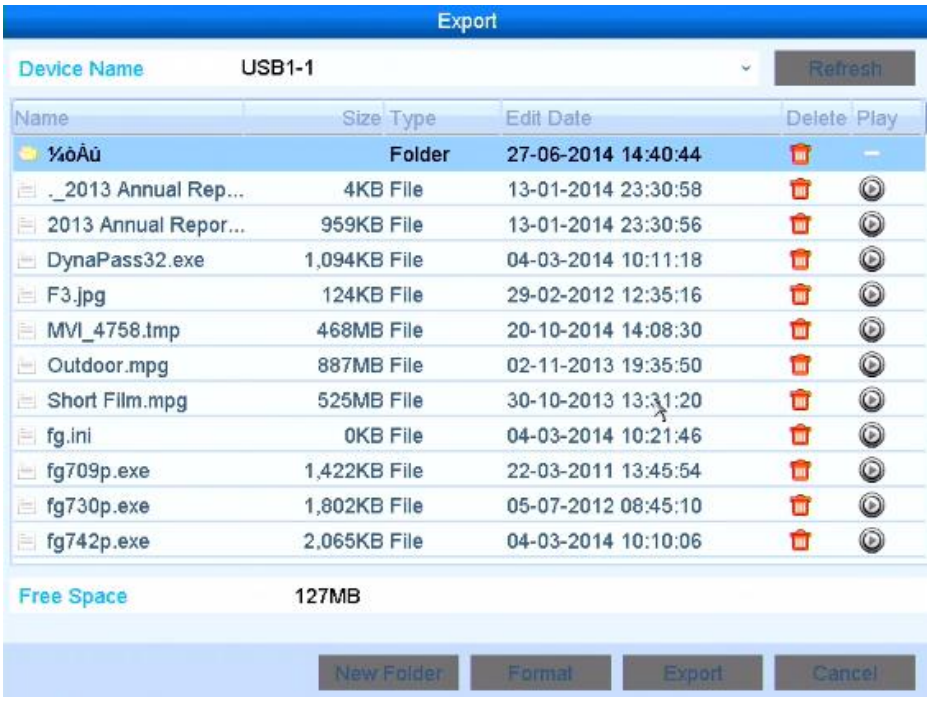


Figure 6. 16 Export Video Clips Using USB Flash Drive

Stay in the Exporting interface until all record files are exported with pop-up message “Export finished”.

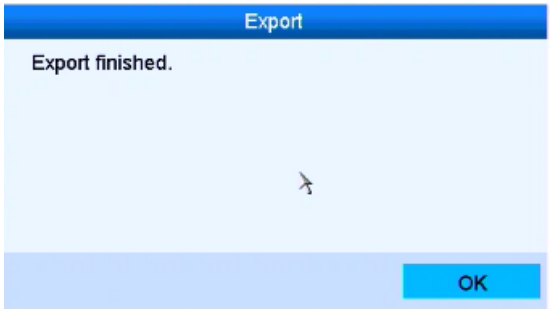


Figure 6. 17 Export Finished

5. Check backup result.

Note:

The Player player.exe will be exported automatically during record file export.

6.2 Managing Backup Devices

Management of USB flash drives and USB HDDs

Steps:

1. Enter Search Result interface of record files.

   Menu>Export>Normal

   Set search condition and click **Search** button to enter Search Result interface.

   Note:

   At least one channel shall be selected.

Figure 6. 18 Normal Video Search for Backup

2. Click **Export All** button to export all the recording files.

   Or you can select recording files you want to back up, and click **Export** button to enter Export interface.

   Note:

   At least one record file shall be selected.

Figure 6. 19 Result of Normal Video Search for Backup

3. Backup device management.

   Click **New Folder** button if you want to create a new folder in the backup device.

   Select a record file or folder in the backup device and click button if you want to delete it.

   Select a record file in the backup device and click button to play it.

   Click **Format** button to format the backup device.

   Note:

   If the inserted USB device is not recognized:

- Click the **Refresh** button.
- Reconnect device.
- Check for compatibility from vendor.

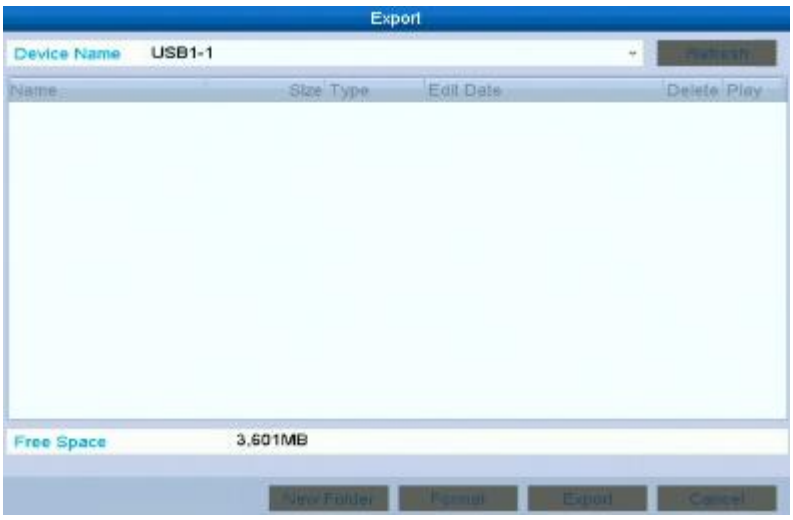


Figure 6. 20 USB Flash Drive Management

Management of USB writers and DVD-R/W

1. Enter Search Result interface of record files.

   Menu>Export>Normal

   Set search condition and click **Search** button to enter Search Result interface.

   Note:

   At least one channel shall be selected.

Figure 6. 21 Normal Video Search for Backup

2. Select record files you want to back up.

   Click **Export All** button to export all the recording files.

   Or you can select recording files you want to back up, and click **Export** button to enter Export interface.

   Note:

   At least one recording file shall be selected.

Figure 6. 22 Result of Normal Video Search for Backup

3. Backup device management.

Click **Erase** button if you want to erase the files from a re-writable CD/DVD.

Note:

- There must be a re-writable CD/DVD when you make this operation.
- If the inserted USB writer or DVD-R/W is not recognized:
  - Click the **Refresh** button.
  - Reconnect device.
  - Check for compatibility from vendor.

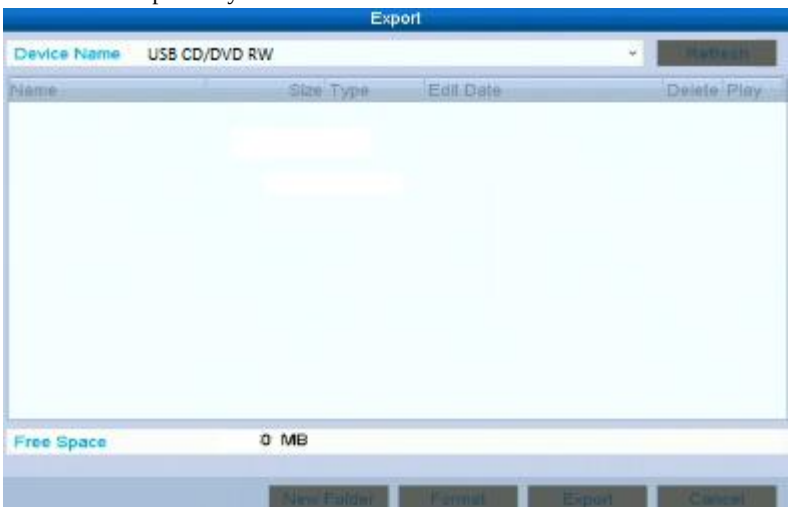


Figure 6. 23 USB Writer Management

Chapter 7 Alarm Settings

7.1 Setting Motion Detection Alarm

Steps:

1. Enter Motion Detection interface of Camera Management and choose a camera you want to set up motion detection.

   Menu> Camera> Motion

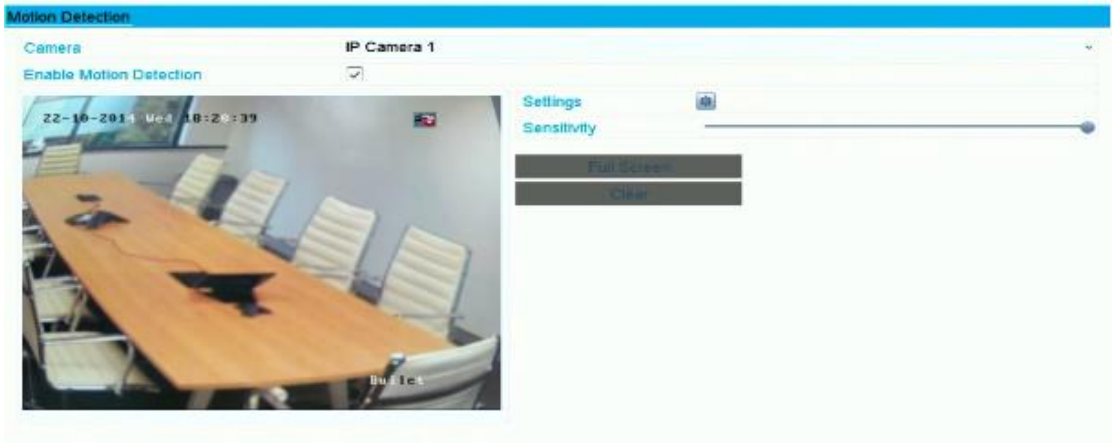


Figure 7. 1 Motion Detection Setup Interface

2. Set up detection area and sensitivity.

   Tick “Enable Motion Detection”, use the mouse to draw detection area(s) and drag the sensitivity bar to set sensitivity.

   Click button and set alarm response actions.

3. Click **Trigger Channel** tab and select one or more channels which will start to record or become full-screen monitoring when motion alarm is triggered, and click **Apply** to save the settings.

Figure 7. 2 Set Trigger Camera of Motion Detection

4. Set up arming schedule of the channel.

1) Select Arming Schedule tab to set the arming schedule of handling actions for the motion detection.
2) Choose one day of a week and up to eight time periods can be set within each day.
3) Click **Apply** to save the settings

Note:

Time periods shall not be repeated or overlapped.

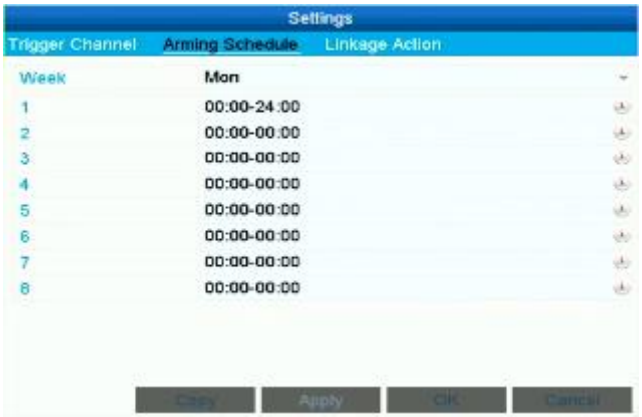


Figure 7. 3 Set Arming Schedule of Motion Detection

5. Click **Linkage Action** tab to set up alarm response actions of motion alarm (please refer to *Chapter 7.7 Setting Alarm Response Actions*).
6. If you want to set motion detection for another channel, repeat the above steps or just click **Copy** in the Motion Detection interface to copy the above settings to it.

7.2 Setting Sensor Alarms

Purpose:

Set the handling action of an external sensor alarm.

Steps:

1. Enter Alarm Settings of System Configuration and select an alarm input.

   Menu> Configuration> Alarm

   Select Alarm Input tab to enter Alarm Input Settings interface.

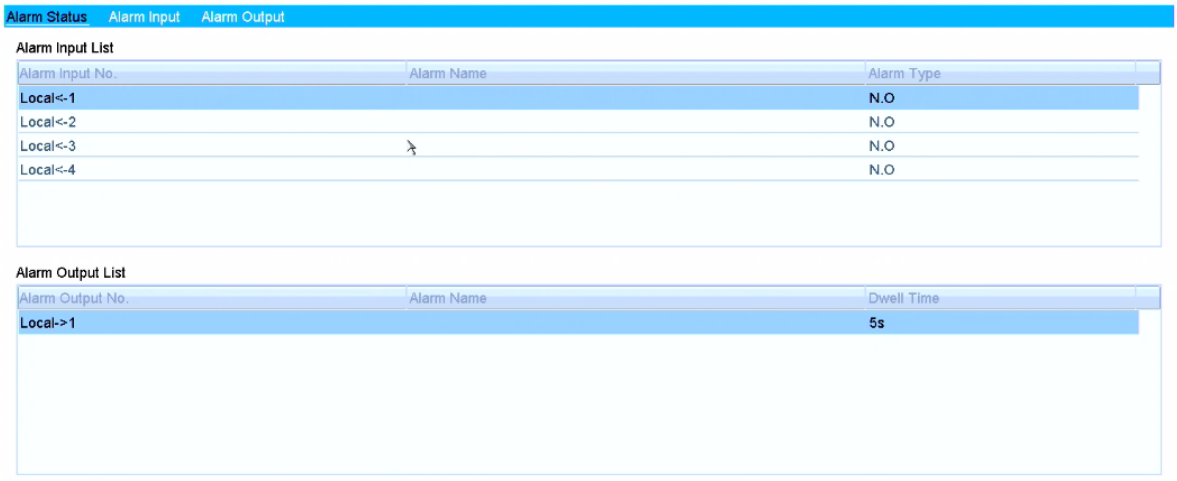


Figure 7. 4 Alarm Status Interface of System Configuration

2. Set up the handling action of the selected alarm input.

   Check the **Enable** checkbox and click **Settings** button to set up its alarm response actions.

Figure 7. 5 Alarm Input Setup Interface

3. Select Trigger Channel tab and select one or more channels which will start to record or become full-screen monitoring when an external alarm is input, and click **Apply** to save the settings.
4. Select **Arming Schedule** tab to set the arming schedule of handling actions.

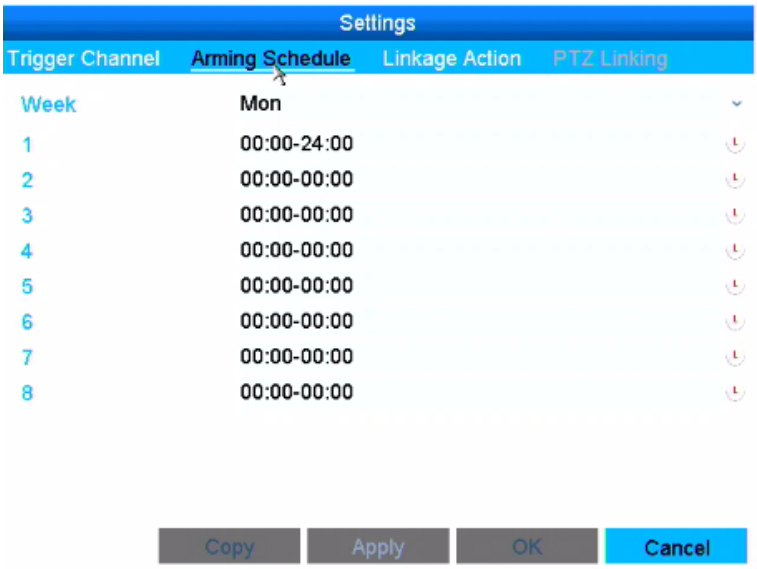


Figure 7. 6 Set Arming Schedule of Alarm Input

Choose one day of a week and Max. eight time periods can be set within each day, and click **Apply** to save the settings.

Note:

Time periods shall not be repeated or overlapped.

Repeat the above steps to set up arming schedule of other days of a week. You can also use **Copy** button to copy an arming schedule to other days.

5. Select **Linkage Action** tab to set up alarm response actions of the alarm input (please refer to *Chapter Setting Alarm Response Actions*).
6. If necessary, select PTZ Linking tab and set PTZ linkage of the alarm input.

   Set PTZ linking parameters and click **OK** to complete the settings of the alarm input.

   Note:

   Please check whether the PTZ or speed dome supports PTZ linkage.

   One alarm input can trigger presets, patrol or pattern of more than one channel. But presets, patrols and patterns are exclusive.

7. If you want to set handling action of another alarm input, repeat the above steps.

   Or you can click the **Copy** button on the Alarm Input Setup interface and check the checkbox of alarm inputs to copy the settings to them.

7.3 Detecting Video Loss Alarm

Purpose:

Detect video loss of a channel and take alarm response action(s).

Steps:

1. Enter Video Loss interface of Camera Management and select a channel you want to detect.

   Menu> Camera> Video Loss

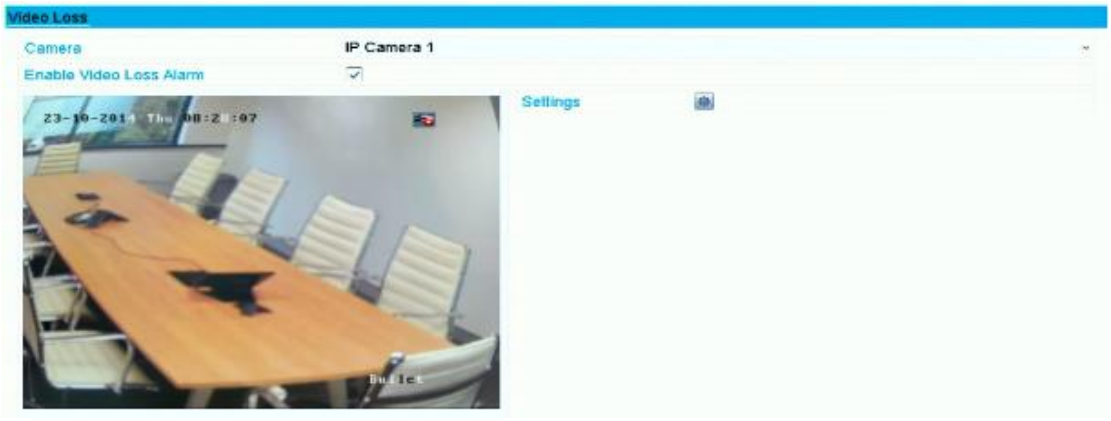


Figure 7. 7 Video Loss Setup Interface

2. Set up handling action of video loss.

   Check the checkbox of "Enable Video Loss Alarm", and click button to set up handling action of video loss.

3. Set up arming schedule of the handling actions.

   1) Select Arming Schedule tab to set the channel's arming schedule.
   2) Choose one day of a week and up to eight time periods can be set within each day.
   3) Click **Apply** button to save the settings.

   Note:

   Time periods shall not be repeated or overlapped.

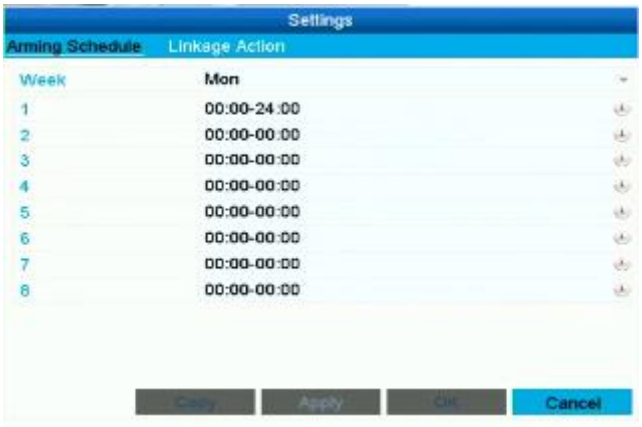


Figure 7. 8 Set Arming Schedule of Video Loss

4. Select **Linkage Action** tab to set up alarm response action of video loss (please refer to *Chapter 7.7 Setting*

Alarm Response Actions).

5. Click the **OK** button to complete the video loss settings of the channel.

7.4 Detecting Video Tampering Alarm

Purpose:

Trigger alarm when the lens is covered and take alarm response action(s).

Steps:

1. Enter Video Tampering interface of Camera Management and select a channel you want to detect video tampering.

   Menu> Camera> Video Tampering

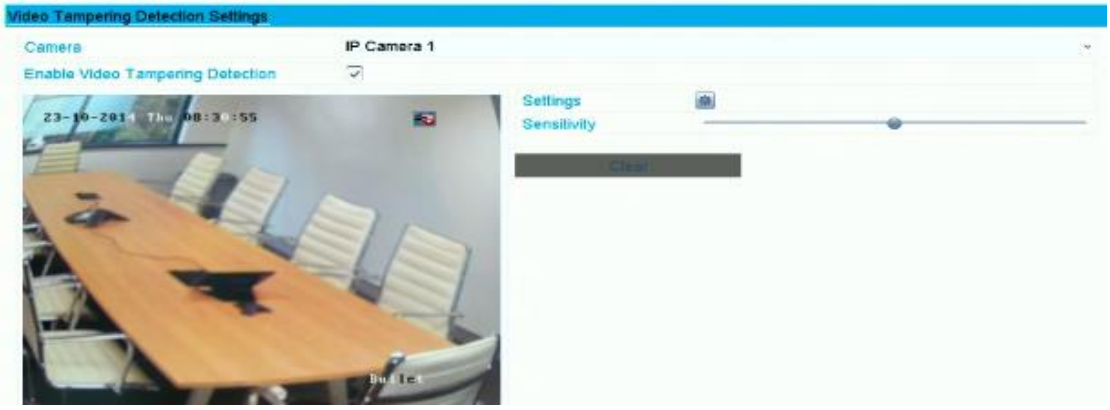


Figure 7. 9 Video Tampering Setup Interface

2. Set the video tampering handling action of the channel.

   Check the checkbox of "Enable Video Tampering Detection".

   Drag the sensitivity bar to set a proper sensitivity level. Use the mouse to draw an area you want to detect video tampering.

   Click button to set up handling action of video tampering.

3. Set arming schedule and alarm response actions of the channel.

   1) Click Arming Schedule tab to set the arming schedule of handling actions.
   2) Choose one day of a week and Max. eight time periods can be set within each day.
   3) Click **Apply** button to save the settings.

   Note:

   Time periods shall not be repeated or overlapped.

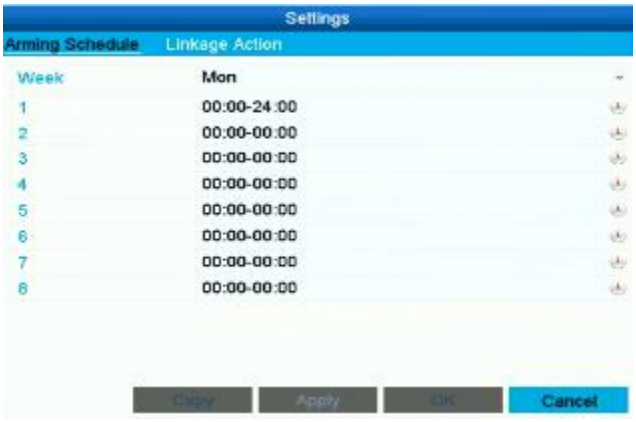


Figure 7. 10 Set Arming Schedule of Video Tampering

4. Select **Linkage Action** tab to set up alarm response actions of video tampering alarm (please refer to *Chapter 7.7 Setting Alarm Response Actions*).
5. Click the **OK** button to complete the video tampering settings of the channel.

7.5 Detecting VCA Alarm

Purpose:

The NVR can receive the VCA alarm sent by IP camera, and the VCA detection must be enabled and configured on the IP camera settings interface first. Refer to the user manual of IP camera for detailed instructions to set the VCA rules.

Steps:

1. Enter VCA Alarm interface of Camera Management and select a camera you want to detect VCA alarm.

   Menu> Camera> VCA

   Note:

   The selected camera must support the VCA function.

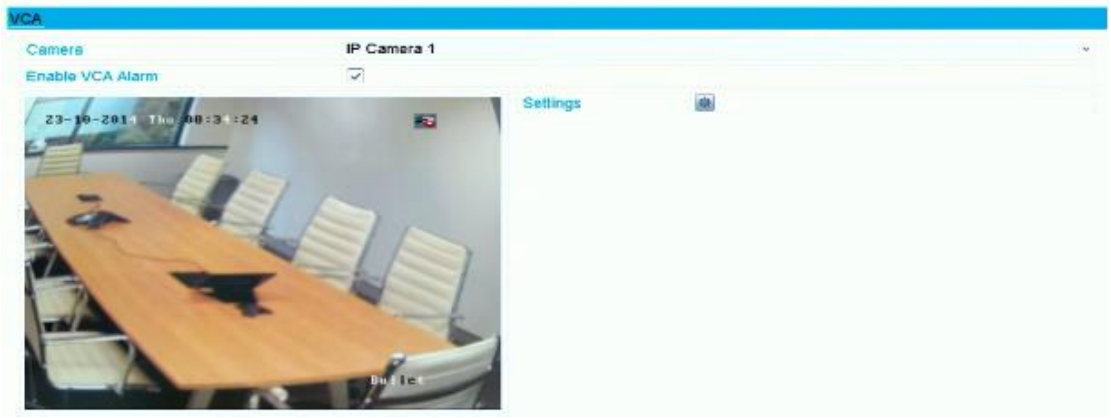


Figure 7. 11 VCA Alarm Setting Interface

2. Check the **Enable VCA Alarm** checkbox and click **Settings** button to set up its alarm response actions.
3. Select Trigger Channel tab and select one or more channels which will start to record or become full-screen monitoring when a VCA alarm is triggered, and click **Apply** to save the settings.
4. Select **Arming Schedule** tab to set the arming schedule of handling actions.

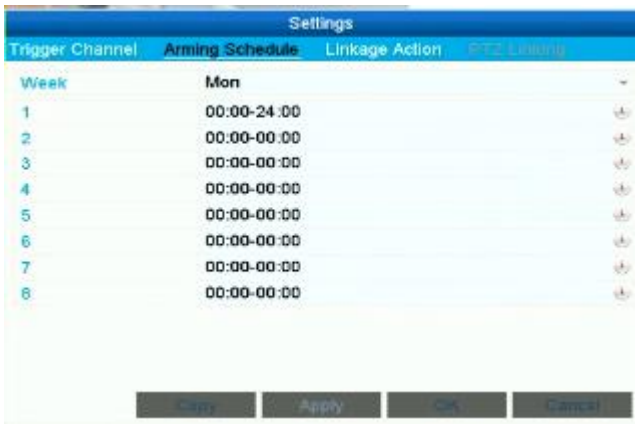


Figure 7. 12 Set Arming Schedule of VCA Alarm

Choose one day of a week and Max. eight time periods can be set within each day, and click **Apply** to save the settings.

Note:

Time periods shall not be repeated or overlapped.

Repeat the above steps to set up arming schedule of other days of a week. You can also use **Copy** button to copy an arming schedule to other days.

5. Select **Linkage Action** tab to set up alarm response actions of the alarm input (please refer to *Chapter 7.7 Setting Alarm Response Actions*).
6. If necessary, select PTZ Linking tab and set PTZ linkage of the VCA alarm, refer to step 6 of *Chapter 7.2 Setting Sensor Alarms*.
7. Click the **OK** button to complete the VCA alarm settings of the channel.

7.6 Handling Exceptions Alarm

Purpose:

Exception settings refer to the handling action of various exceptions, e.g.

- **HDD Full:** The HDD is full.
- **HDD Error:** Writing HDD error or unformatted HDD.
- **Network Disconnected:** Disconnected network cable.
- **IP Conflicted:** Duplicated IP address.
- **Illegal Login:** Incorrect user ID or password.
- **Record Exception:** No space for saving recorded files.
- **PoE Power Overload:** The power consumption of the connected cameras via the PoE interface exceeds the maximum PoE power.

Note:

PoE Power Overload is only supported by DS-7600NI-E1/4P, DS-7600NI-E2/8P and DS-7700NI-E4/P series NVR.

Steps:

Enter Exception interface of System Configuration and handle various exceptions.

Menu> Configuration> Exceptions

Please refer to *Chapter Setting Alarm Response Actions* for detailed alarm response actions.

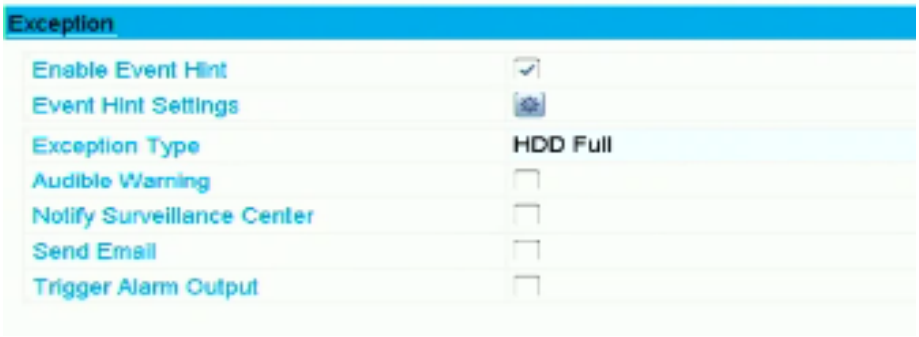


Figure 7. 13 Exceptions Setup Interface

7.7 Setting Alarm Response Actions

Purpose:

Alarm response actions will be activated when an alarm or exception occurs, including Event Hint Display, Full Screen Monitoring, Audible Warning (buzzer), Notify Surveillance Center, Upload Picture to FTP, Trigger Alarm Output and Send Email.

Event Hint Display

When an event or exception happens, a hint can be displayed on the lower-left corner of live view image. And you can click the hint icon to check the details. Besides, the event to be displayed is configurable.

Steps:

1. Enter the Exception settings interface.
   Menu > Configuration > Exceptions
2. Check the checkbox of **Enable Event Hint**.

Figure 7. 14 Event Hint Settings Interface

3. Click the to set the type of event to be displayed on the image.

Figure 7. 15 Event Hint Settings Interface

4. Click the **OK** button to finish settings.

Full Screen Monitoring

When an alarm is triggered, the local monitor (VGA and HDMI™ monitor) display in full screen the video image from the alarming channel configured for full screen monitoring.

If alarms are triggered simultaneously in several channels, their full-screen images will be switched at an interval of 10 seconds (default dwell time). A different dwell time can be set by going to Menu >Configuration>Live View > Full Screen Monitoring Dwell Time.

Auto-switch will terminate once the alarm stops and you will be taken back to the Live View interface.

Note:

You must select during “Trigger Channel” settings the channel(s) you want to make full screen monitoring.

Audible Warning

Trigger an audible *beep* when an alarm is detected.

Notify Surveillance Center

Sends an exception or alarm signal to remote alarm host when an event occurs. The alarm host refers to the PC installed with Remote Client.

Note:

The alarm signal will be transmitted automatically at detection mode when remote alarm host is configured. Please refer to *Chapter Configuring Remote Alarm Host* for details of alarm host configuration.

Email Linkage

Send an email with alarm information to a user or users when an alarm is detected.

Please refer to *Chapter* 8.2.9 for details of Email configuration.

Trigger Alarm Output

Trigger an alarm output when an alarm is triggered.

1. Enter Alarm Output interface.

   Menu> Configuration> Alarm> Alarm Output

   Select an alarm output and set alarm name and dwell time. Click **Schedule** button to set the arming schedule of alarm output.

   Note:

   If “Manually Clear” is selected in the dropdown list of Dwell Time, you can clear it only by going to Menu> Manual> Alarm.

Figure 7. 16 Alarm Output Setup Interface

2. Set up arming schedule of the alarm output.

   Choose one day of a week and up to 8 time periods can be set within each day.

   Note:

   Time periods shall not be repeated or overlapped.

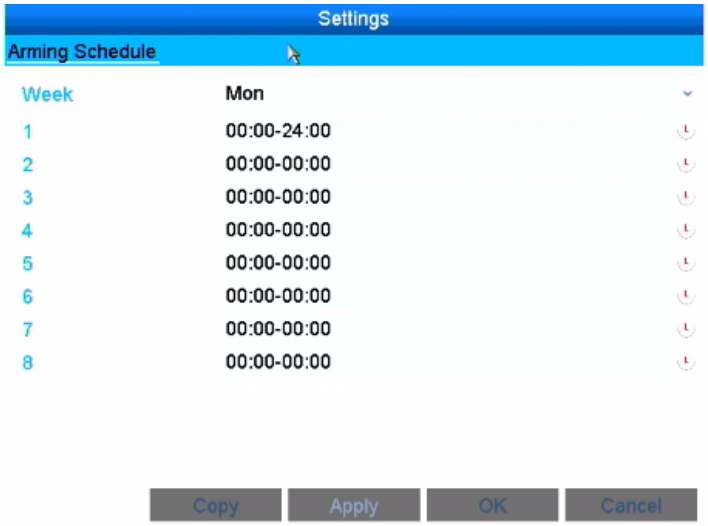


Figure 7. 17 Set Arming Schedule of Alarm Output

3. Repeat the above steps to set up arming schedule of other days of a week. You can also use **Copy** button to copy an arming schedule to other days.

   Click the **OK** button to complete the video tampering settings of the alarm output No.

4. You can also copy the above settings to another channel.

Figure 7. 18 Copy Settings of Alarm Output

7.8 Triggering or Clearing Alarm Output Manually

Purpose:

Sensor alarm can be triggered or cleared manually. If "Manually Clear" is selected in the dropdown list of dwell time of an alarm output, the alarm can be cleared only by clicking **Clear** button in the following interface.

Steps:

Select the alarm output you want to trigger or clear and make related operations.

Menu> Manual> Alarm

Click **Trigger/Clear** button if you want to trigger or clear an alarm output.

Click **Trigger All** button if you want to trigger all alarm outputs.

Click **Clear All** button if you want to clear all alarm output.

Figure 7. 19 Clear or Trigger Alarm Output Manually

Chapter 8 Network Settings

8.1 Configuring General Settings

Purpose:

Network settings must be properly configured before you operate NVR over network.

Steps:

1. Enter the Network Settings interface.

   Menu >Configuration>Network

2. Select the **General** tab.

Figure 8. 1 Network Settings Interface

3. In the **General Settings** interface, you can configure the following settings: Working Mode, NIC Type, IPv4 Address, IPv4 Gateway, MTU and DNS Server.

   If the DHCP server is available, you can click the checkbox of **DHCP** to automatically obtain an IP address and other network settings from that server.

   Note:

   - For the models which has the PoE or built-in switch network interfaces, the internal NIC IPv4 address should be configured for the cameras connecting to the extra network interface of the NVR.
   - The valid value range of MTU is 500 ~ 9676.

4. After having configured the general settings, click **Apply** button to save the settings.

8.2 Configuring Advanced Settings

8.2.1 Configuring PPPoE Settings

Purpose:

Your NVR also allows access by Point-to-Point Protocol over Ethernet (PPPoE).

Steps:

1. Enter the **Network Settings** interface.
   Menu >Configuration> Network
2. Select the **PPPoE** tab to enter the PPPoE Settings interface, as shown in Figure 8. 2.

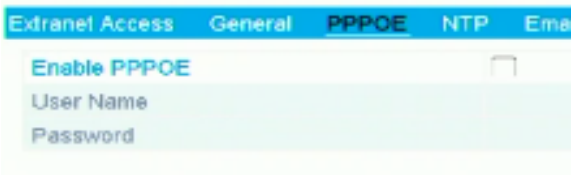


Figure 8. 2 PPPoE Settings Interface

3. Check the **PPPoE** checkbox to enable this feature.
4. Enter **User Name**, and **Password** for PPPoE access.
   Note:
   The User Name and Password should be assigned by your ISP.
5. Click the **Apply** button to save and exit the interface.
6. After successful settings, the system asks you to reboot the device to enable the new settings, and the PPPoE dial-up is automatically connected after reboot.

You can go to Menu >Maintenance>System Info >Network interface to view the status of PPPoE connection.

Please refer to *Chapter Viewing System Information* for PPPoE status.

8.2.2 Configuring Extranet Access

Purpose:

If your NVR is set to use PPPoE as its default network connection, you may set Dynamic DNS (DDNS) to be used for network access.

Prior registration with your ISP is required before configuring the system to use DDNS.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
2. Select the **Extranet Access** tab to enter the DDNS Settings interface, as shown in Figure 8. 3.

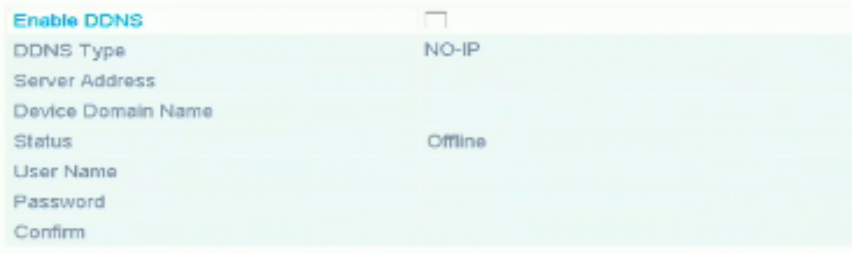


Figure 8. 3 DDNS Settings Interface

3. Check the **DDNS** checkbox to enable this feature.
4. Select **DDNS Type**. Five different DDNS types are selectable: IPServer, DynDNS, PeanutHull and NO-IP.
   - **IPServer:** Enter **Server Address** for IPServer.

Figure 8. 4 IPServer Settings Interface

   - **DynDNS:**
     1) Enter **Server Address** for DynDNS (i.e. members.dyndns.org).
     2) In the NVR Domain Name text field, enter the domain obtained from the DynDNS website.
     3) Enter the **User Name** and **Password** registered in the DynDNS website.

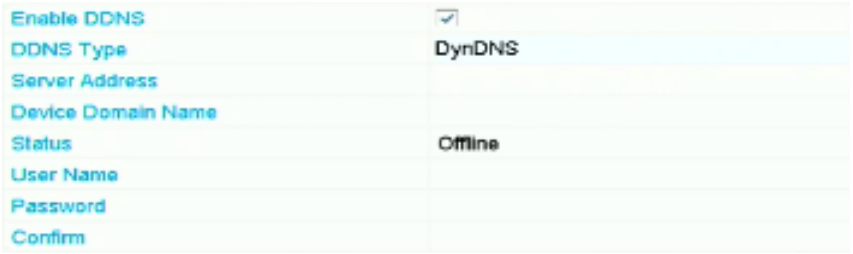


Figure 8. 5 DynDNS Settings Interface

   - **PeanutHull:** Enter the **User Name** and **Password** obtained from the PeanutHull website.

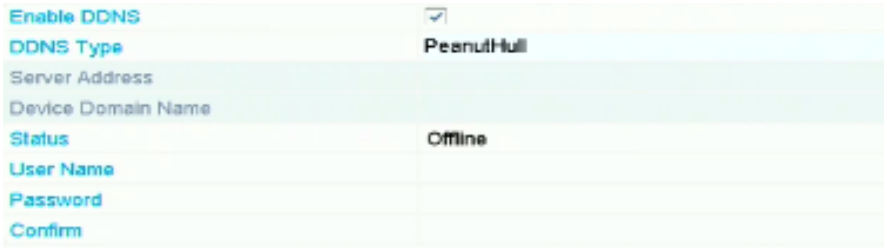


Figure 8. 6 PeanutHull Settings Interface

   - **NO-IP:**

     Enter the account information in the corresponding fields. Refer to the DynDNS settings.
     1) Enter **Server Address** for NO-IP.

2) In the NVR Domain Name text field, enter the domain obtained from the NO-IP website (www.no-ip.com).
3) Enter the **User Name** and **Password** registered in the NO-IP website.

Figure 8. 7 NO-IP Settings Interface

After setting all the required parameters for the DDNS, you can view the connecting status of the device by checking the **Status** information.

8.2.3 Configuring NTP Server

Purpose:

Ensure the network connection of the PC (running FTP server) and the device is valid and correct. Run the FTP server on the PC and copy the firmware into the corresponding directory of your PC.

Note:

Refer to the user manual of the FTP server to set the FTP server on your PC and put the firmware file into the directory as required.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
2. Select the **NTP** tab to enter the NTP Settings interface, as shown in Figure 8. 8.

Figure 8. 8 NTP Settings Interface

3. Check the **Enable NTP** checkbox to enable this feature.
4. Configure the following NTP settings:
   - **Interval:** Time interval between the two synchronizing actions with NTP server. The unit is minute.
   - **NTP Server:** IP address of NTP server.
   - **NTP Port:** Port of NTP server.
5. Click the **Apply** button to save and exit the interface.

Note:

The time synchronization interval can be set from1 to 10080min, and the default value is 60min. If the NVR is connected to a public network, you should use a NTP server that has a time synchronization function, such as the server at the National Time Center (IP Address: 210.72.145.44). If the NVR is setup

in a more customized network, NTP software can be used to establish a NTP server used for time synchronization.

8.2.4 Configuring SNMP

Purpose:

You can use SNMP protocol to get device status and parameters related information.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
2. Select the **SNMP** tab to enter the SNMP Settings interface, as shown in Figure 8. 9.

Figure 8. 9 SNMP Settings Interface

3. Check the **SNMP** checkbox to enable this feature.
4. Configure the following SNMP settings:
   - **Trap Address:** IP Address of SNMP host.
   - **Trap Port:** Port of SNMP host.
5. Click the **Apply** button to save and exit the interface.

Note:

Before setting the SNMP, please download the SNMP software and manage to receive the device information via SNMP port. By setting the Trap Address, the NVR is allowed to send the alarm event and exception message to the surveillance center.

8.2.5 Configuring Remote Alarm Host

Purpose:

With a remote alarm host configured, the NVR will send the alarm event or exception message to the host when an alarm is triggered. The remote alarm host must have the Network Video Surveillance software installed.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
2. Select the **More Settings** tab to enter the More Settings interface, as shown in Figure 8. 10.

Figure 8. 10 More Settings Interface

3. Enter **Alarm Host IP** and **Alarm Host Port** in the text fields.
   The **Alarm Host IP** refers to the IP address of the remote PC on which the Network Video Surveillance Software (e.g., iVMS-4200) is installed, and the **Alarm Host Port** must be the same as the alarm monitoring port configured in the software.
4. Click the **Apply** button to save and exit the interface.

8.2.6 Configuring Multicast

Purpose:

The multicast can be configured to realize live view for more than 128 connections through network for the device. A multicast address spans the Class-D IP range of 224.0.0.0 to239.255.255.255. It is recommended to use the IP address ranging from 239.252.0.0 to 239.255.255.255.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
2. Select the **More Settings** tab to enter the More Settings interface.
3. Set **Multicast IP**, as shown below. When adding a device to the Network Video Surveillance Software, the multicast address must be the same as the NVR's multicast IP.

Figure 8. 11 Configure Multicast

4. Click the **Apply** button to save and exit the interface.

Note:

The multicast function should be supported by the network switch to which the NVR is connected.

8.2.7 Configuring RTSP

Purpose:

The RTSP (Real Time Streaming Protocol) is a network control protocol designed for use in communication systems to control streaming media servers.

Steps:

1. Enter the Network Settings menu
   Menu >Configuration> Network

2. Select the **More Settings** tab to enter the More Settings menu, as shown in Figure 8. 10.

Figure 8. 12 RTSP Settings Interface

3. Enter the RTSP port in the text field of **RTSP Service Port**. The default RTSP port is 554, and you can change it according to different requirements.
4. Click the **Apply** button to save and exit the menu.

8.2.8 Configuring Server and HTTP Ports

Purpose:

You can change the server and HTTP ports in the Network Settings menu. The default server port is 8000 and the default HTTP port is 80.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
2. Select the **More Settings** tab to enter the More Settings interface, as shown in Figure 8. 10.
3. Enter new **Server Port** and **HTTP Port**.

Figure 8. 13 Host/Others Settings Menu

4. Enter the Server Port and HTTP Port in the text fields. The default Server Port is 8000 and the HTTP Port is 80, and you can change them according to different requirements.
5. Click the **Apply** button to save and exit the interface.

Note:

The Server Port should be set to the range of 2000-65535 and it is used for remote client software access. The HTTP port is used for remote web browser access.

8.2.9 Configuring Email

Purpose:

The system can be configured to send an Email notification to all designated users if an alarm event is detected, etc., an alarm or motion event is detected or the administrator password is changed.

Before configuring the Email settings, the NVR must be connected to a local area network (LAN) that maintains an SMTP mail server. The network must also be connected to either an intranet or the Internet depending on the location of the e-mail accounts to which you want to send notification.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
2. Set the IPv4 Address, IPv4 Subnet Mask, IPv4 Gateway and the Preferred DNS Server in the Network Settings menu, as shown below.

Figure 8. 14 Network Settings Interface

3. Click **Apply** to save the settings.
4. Select the Email tab to enter the Email Settings interface.

Figure 8. 15 Email Settings Interface

5. Configure the following Email settings:

   Enable Server Authentication (optional): Check the checkbox to enable the server authentication feature.

   User Name: The user account of sender's Email for SMTP server authentication.

   Password: The password of sender's Email for SMTP server authentication.

   SMTP Server: The SMTP Server IP address or host name (e.g., smtp.263xmail.com).

   SMTP Port No.: The SMTP port. The default TCP/IP port used for SMTP is 25.

   Enable SSL (optional): Click the checkbox to enable SSL if required by the SMTP server.

   Sender: The name of sender.

   Sender's Address: The Email address of sender.

   Select Receivers: Select the receiver. Up to 3 receivers can be configured.

   Receiver: The name of user to be notified.

   Receiver's Address: The Email address of user to be notified.

   Enable Attached Pictures: Check the checkbox of **Enable Attached Picture** if you want to send email with attached alarm images. The interval is the time of two adjacent alarm images. You can also set SMTP port and enable SSL here.

   Interval: The interval refers to the time between two actions of sending attached pictures.

   E-mail Test: Sends a test message to verify that the SMTP server can be reached.
6. Click **Apply** button to save the Email settings.

7. You can click **Test** button to test whether your Email settings work.

8.2.10 Configuring NAT

Purpose:

Two ways are provided for port mapping to realize the remote access via the cross-segment network, UPnP™ and manual mapping.

- **UPnP™**

Universal Plug and Play (UPnP™) can permit the device seamlessly discover the presence of other network devices on the network and establish functional network services for data sharing, communications, etc. You can use the UPnP™ function to enable the fast connection of the device to the WAN via a router without port mapping.

Before you start:

If you want to enable the UPnP™ function of the device, you must enable the UPnP™ function of the router to which your device is connected. When the network working mode of the device is set as multi-address, the Default Route of the device should be in the same network segment as that of the LAN IP address of the router.

Steps:

1. Enter the Network Settings interface.
   Menu > Configuration > Network
2. Select the **NAT** tab to enter the port mapping interface.

Figure 8. 16 UPnP™ Settings Interface

3. Check checkbox to enable UPnP™.
4. Select the Mapping Type as Manual or Auto in the drop-down list.

   OPTION 1: Auto

   If you select Auto, the Port Mapping items are read-only, and the external ports are set by the router automatically.

   Steps:

   1) Select **Auto** in the drop-down list of Mapping Type.
   2) Click **Apply** button to save the settings.
   3) You can click **Refresh** button to get the latest status of the port mapping.

   OPTION 2: Manual

   If you select Manual as the mapping type, you can edit the external port on your demand by clicking to activate the External Port Settings dialog box.

   Steps:

   1) Select **Manual** in the drop-down list of Mapping Type.
   2) Click to activate the External Port Settings dialog box. Configure the external port No. for server

port, http port, RTSP port and https port respectively.

Note:

- You can use the default port No., or change it according to actual requirements.
- External Port indicates the port No. for port mapping in the router.
- The value of the RTSP port No. should be 554 or between 1024 and 65535, while the value of the other ports should be between 1 and 65535 and the value must be different from each other. If multiple devices are configured for the UPnP™ settings under the same router, the value of the port No. for each device should be unique.

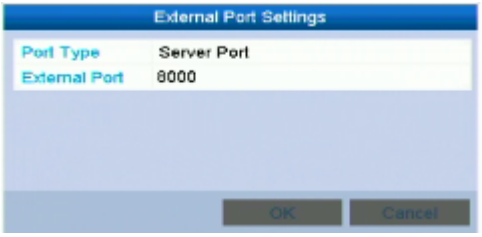


Figure 8. 17 External Port Settings Dialog Box

3) Click **Apply** button to save the settings.

4) You can click **Refresh** button to get the latest status of the port mapping.

- **Manual Mapping**

If your router does not support the UPnP™ function, perform the following steps to map the port manually in an easy way.

Before you start:

Make sure the router support the configuration of internal port and external port in the interface of Forwarding.

Steps:

1. Enter the Network Settings interface.
   Menu > Configuration > Network
2. Select the **NAT** tab to enter the port mapping interface.
3. Leave the Enable UPnP checkbox unchecked.
4. Click to activate the External Port Settings dialog box. Configure the external port No. for server port, http port, RTSP port and https port respectively.

Note:

The value of the RTSP port No. should be 554 or between 1024 and 65535, while the value of the other ports should be between 1 and 65535 and the value must be different from each other. If multiple devices are configured for the UPnP™ settings under the same router, the value of the port No. for each device should be unique.

Figure 8. 18 External Port Settings Dialog Box

5. Click **OK** to save the setting for the current port and return to the upper-level menu.
6. Click **Apply** button to save the settings.
7. Enter the virtual server setting page of router; fill in the blank of Internal Source Port with the internal port value, the blank of External Source Port with the external port value, and other required contents.

   Note:

   Each item should be corresponding with the device port, including server port, http port, RTSP port and https port.

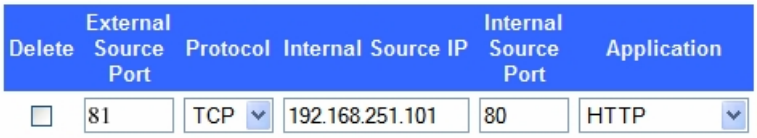


Figure 8. 19 Setting Virtual Server Item

Note:

The above virtual server setting interface is for reference only, it may be different due to different router manufactures. Please contact the manufacture of router if you have any problems with setting virtual server.

8.3 Checking Network Traffic

Purpose:

You can check the network traffic to obtain real-time information of NVR such as linking status, MTU, sending/receiving rate, etc.

Steps:

1. Enter the Network Traffic interface.

   Menu > Maintenance > Net Detect

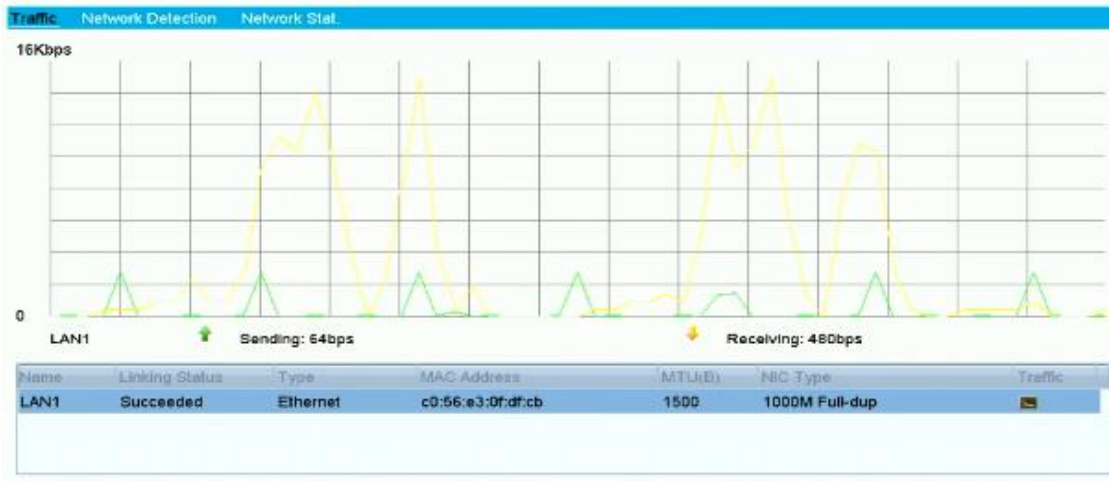


Figure 8. 20 Network Traffic Interface

2. You can view the sending rate and receiving rate information on the interface. The traffic data is refreshed every 1 second.

8.4 Configuring Network Detection

Purpose:

You can obtain network connecting status of NVR through the network detection function, including network delay, packet loss, etc.

8.4.1 Testing Network Delay and Packet Loss

Steps:

1. Enter the Network Traffic interface.
   Menu >Maintenance>Net Detect
2. Click the **Network Detection** tab to enter the Network Detection menu, as shown in Figure 8. 21.

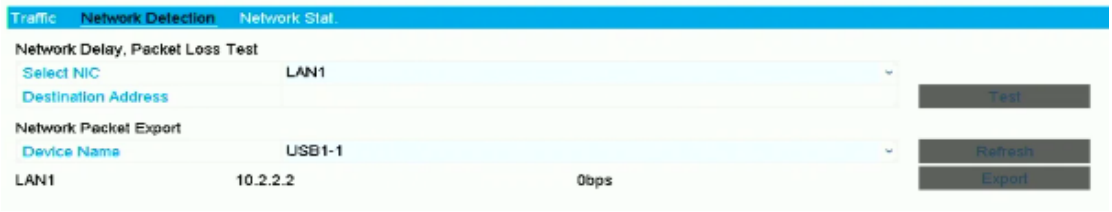


Figure 8. 21 Network Detection Interface

3. Enter the destination address in the text field of **Destination Address**.
4. Click **Test** button to start testing network delay and packet loss. The testing result pops up on the window. If the testing is failed, the error message box will pop up as well.

8.4.2 Exporting Network Packet

Purpose:

By connecting the NVR to network, the captured network data packet can be exported to USB-flash disk, SATA, DVD-R/W and other local backup devices.

Steps:

1. Enter the Network Traffic interface.
   Menu >Maintenance>Net Detect
2. Click the **Network Detection** tab to enter the Network Detection interface.
3. Select the backup device from the dropdown list of Device Name, as shown in **Error! Reference source not found.**.

Note:

Click **Refresh** button if the connected local backup device cannot be displayed. When it fails to detect the backup device, please check whether it is compatible with the NVR. You can format the backup device if the format is incorrect.

4. Click **Export** button to start exporting.
5. After the exporting is complete, click **OK** to finish the packet export,

Note:

Up to 1M data can be exported each time.

8.4.3 Checking the Network Status

Purpose:

You can also check the network status and quick set the network parameters in this interface.

Steps:

Click the **Status** button on the lower- right corner of the page.

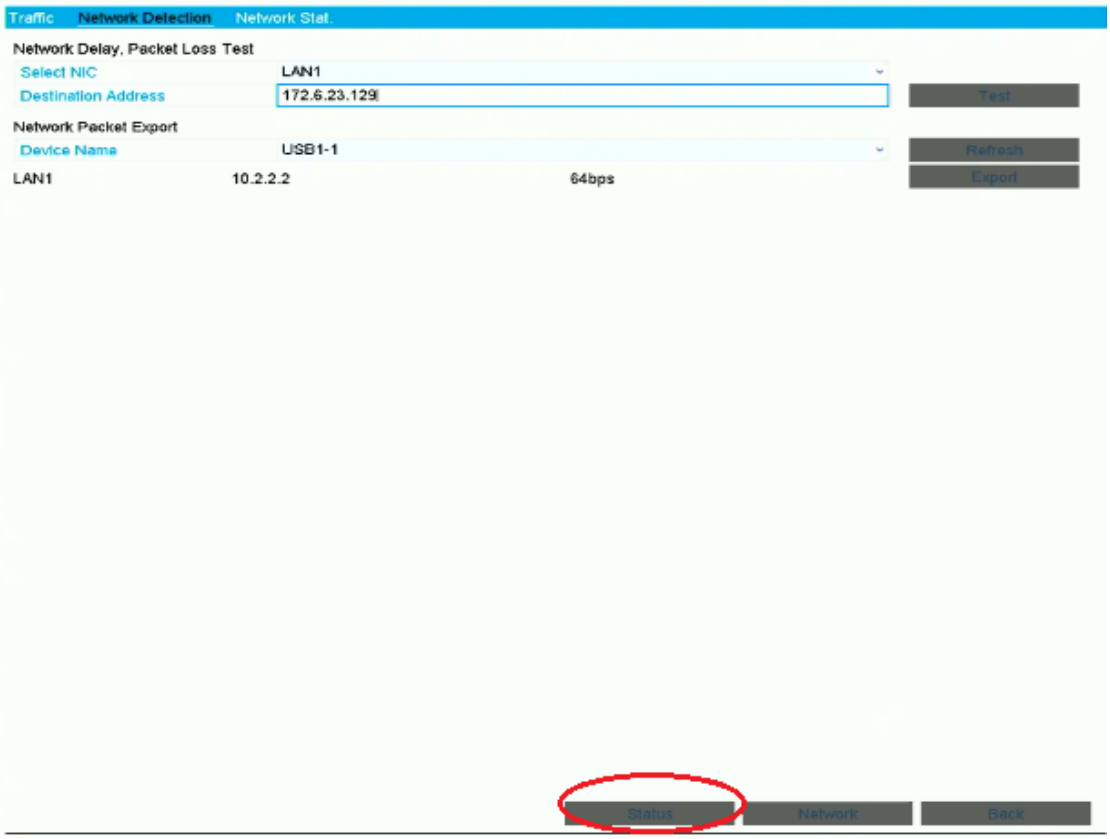


Figure 8. 22 Network Status Checking

If the network is normal the 'Network is normal' box pops out.

If the message box pops out with other information instead of this one, you can click **Network** button to show the quick setting interface of the network parameters.

8.4.4 Checking Network Statistics

Purpose:

You can check the network status to obtain the real-time information of NVR.

Steps:

1. Enter the Network Detection interface.

   Menu>Maintenance>Net Detect

2. Choose the **Network Stat.** tab.

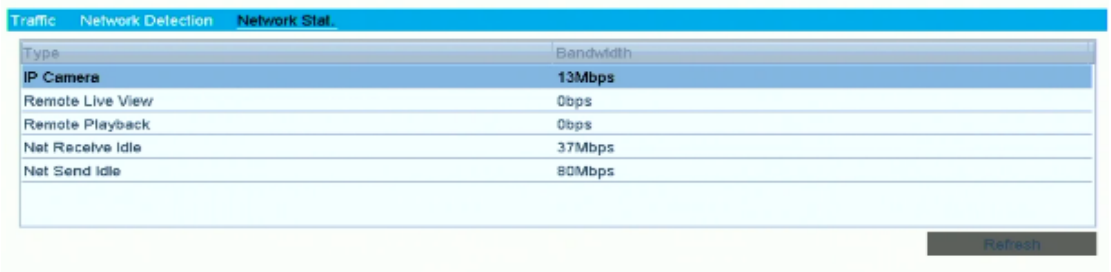


Figure 8. 23 Network Stat. Interface

3. Check the bandwidth of IP Camera, bandwidth of Remote Live View, bandwidth of Remote Playback, bandwidth of Net Receive Idle and bandwidth of Net Send Idle.
4. You can click **Refresh** to get the newest status.

Chapter 9 HDD Management

9.1 Initializing HDDs

Purpose:

A newly installed hard disk drive (HDD) must be initialized before it can be used with your NVR.

Note:

A message box pops up when the NVR starts up if there exits any uninitialized HDD.

Attention
Not all hard disks are initialized. Initialization will erase all data on the disk. Do you want to initialize the disk(s)?
Yes
No

Figure 9. 1 Message Box of Uninitialized HDD

Click **Yes** button to initialize it immediately or you can perform the following steps to initialize the HDD.

Steps:

1. Enter the HDD Information interface.

   Menu > HDD> General

Figure 9. 2 HDD Information Interface

2. Select HDD to be initialized.
3. Click the **Init** button.

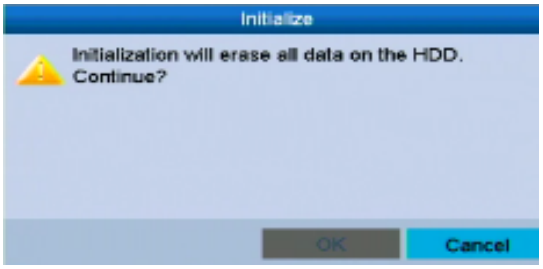


Figure 9. 3 Confirm Initialization

4. Select the **OK** button to start initialization.
5. After the HDD has been initialized, the status of the HDD will change from *Uninitialized* to *Normal*.

Note:

Initializing the HDD will erase all data on it.

9.2 Managing Network HDD

Purpose:

You can add the allocated NAS or disk of IP SAN to NVR, and use it as network HDD.

Steps:

1. Enter the HDD Information interface.

   Menu > HDD>General

2. Click the **Add** button to enter the Add NetHDD interface, as shown in Figure 9. 4.

Figure 9. 4 HDD Information Interface

3. Add the allocated NetHDD.
4. Select the type to NAS or IP SAN.
5. Configure the NAS or IP SAN settings.

   - **Add NAS disk:**

   1) Enter the NetHDD IP address in the text field.
   2) Click the **Search** button to search the available NAS disks.
   3) Select the NAS disk from the list shown below.

      Or you can just manually enter the directory in the text field of NetHDD Directory.
   4) Click the **OK** button to add the configured NAS disk.

   Note:

   Up to 8 NAS disks can be added.

   - **Add IP SAN:**

   1) Enter the NetHDD IP address in the text field.
   2) Click the **Search** button to search the available IP SAN disks.
   3) Select the IP SAN disk from the list shown below.
   4) Click the **OK** button to add the selected IP SAN disk.

   Note:

   Up to 1 IP SAN disk can be added.

6. After having successfully added the NAS or IP SAN disk, return to the HDD Information menu. The added

NetHDD will be displayed in the list.

Note:

If the added NetHDD is uninitialized, please select it and click the **Init** button for initialization.

9.3 Managing HDD Group

9.3.1 Setting HDD Groups

Purpose:

Multiple HDDs can be managed in groups. Video from specified channels can be recorded onto a particular HDD group through HDD settings.

Steps:

1. Enter the Storage Mode interface.
   Menu > HDD > Advanced
2. Set the **Mode** to Group, as shown in Figure 9. 5.

Figure 9. 5 Storage Mode Interface

3. Click the **Apply** button and the following Attention box will pop up.

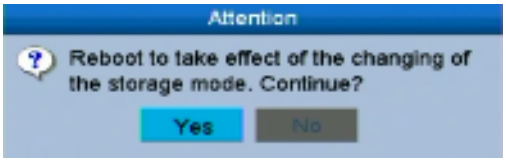


Figure 9. 6 Attention for Reboot

4. Click the **Yes** button to reboot the device to activate the changes.
5. After reboot of device, enter the HDD Information interface.
   Menu > HDD> General
6. Select HDD from the list and click icon to enter the Local HDD Settings interface.
7. Select the Group number for the current HDD.

Note:

The default group No. for each HDD is 1.

8. Click the **OK** button to confirm the settings.
9. In the pop-up Attention box, click the **Yes** button to finish the settings.

9.3.2 Setting HDD Property

Purpose:

The HDD property can be set to redundancy, read-only or read/write (R/W). Before setting the HDD property, please set the storage mode to Group (refer to step1-4 of *Chapter Setting HDD Groups*).

A HDD can be set to read-only to prevent important recorded files from being overwritten when the HDD becomes full in overwrite recording mode.

When the HDD property is set to redundancy, the video can be recorded both onto the redundancy HDD and the R/W HDD simultaneously so as to ensure high security and reliability of video data.

Steps:

1. Enter the HDD Information interface.
   Menu > HDD> General
2. Select HDD from the list and click the icon to enter the Local HDD Settings interface,
3. Set the HDD property to R/W, Read-only or Redundancy.
4. Click the **OK** button to save the settings and exit the interface.
5. In the HDD Information menu, the HDD property will be displayed in the list.

Note:

At least 2 hard disks must be installed on your NVR when you want to set a HDD to Redundancy, and there is one HDD with R/W property.

9.4 Configuring Quota Mode

Purpose:

Each camera can be configured with allocated quota for the storage of recorded files.

Steps:

1. Enter the Storage Mode interface.

   Menu > HDD > Advanced

2. Set the **Mode** to Quota, as shown in Figure 9. 7.

   Note:

   The NVR must be rebooted to enable the changes to take effect.

Figure 9. 7 Storage Mode Settings Interface

3. Select a camera for which you want to configure quota.
4. Enter the storage capacity in the text fields of **Max. Record Capacity (GB)**, as shown in Figure 9. 8.

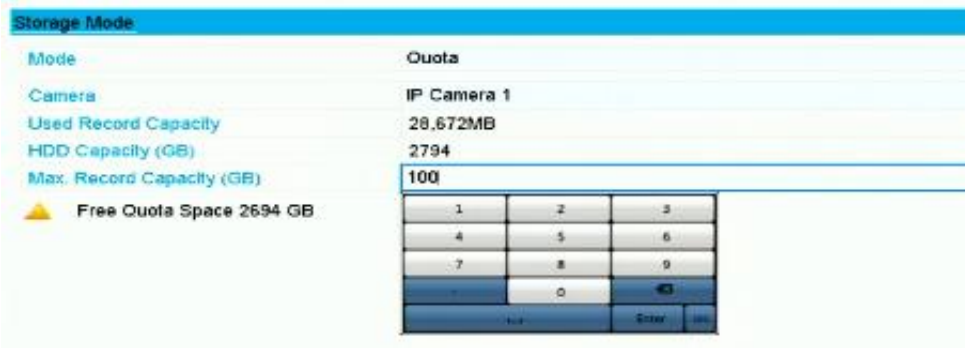


Figure 9. 8 Configure Record Quota

5. You can copy the quota settings of the current camera to other cameras if required. Click the **Copy** button to enter the Copy Camera menu, as shown in Figure below.

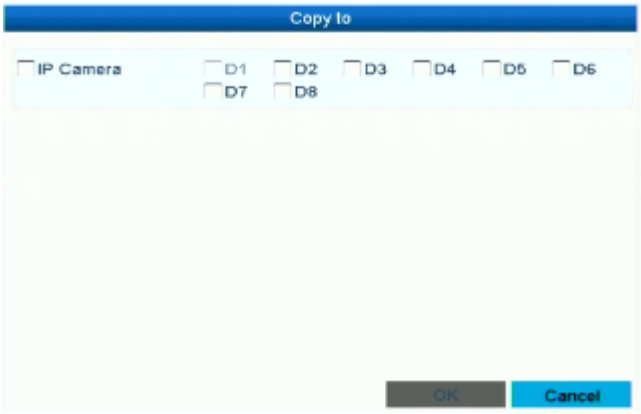


Figure 9. 9 Copy Settings to Other Camera(s)

6. Select the camera (s) to be configured with the same quota settings. You can also click the checkbox of IP Camera to select all cameras.
7. Click the **OK** button to finish the Copy settings and back to the Storage Mode interface.
8. Click the **Apply** button to apply the settings.

Note:

If the quota capacity is set to *0*, then all cameras will use the total capacity of HDD for record.

9.5 Checking HDD Status

Purpose:

You may check the status of the installed HDDs on NVR so as to take immediate check and maintenance in case of HDD failure.

Checking HDD Status in HDD Information Interface

Steps:

1. Enter the HDD Information interface.

   Menu > HDD>General

2. Check the status of each HDD which is displayed on the list, as shown below.

Figure 9. 10 View HDD Status (1)

Note:

If the status of HDD is *Normal* or *Sleeping*, it works normally. If the status is *Uninitialized* or *Abnormal*, please initialize the HDD before use. And if the HDD initialization is failed, please replace it with a new one.

Checking HDD Status in HDD Information Interface

Steps:

1. Enter the System Information interface.

   Menu >Maintenance > System Info

2. Click the **HDD** tab to view the status of each HDD displayed on the list, as shown below.

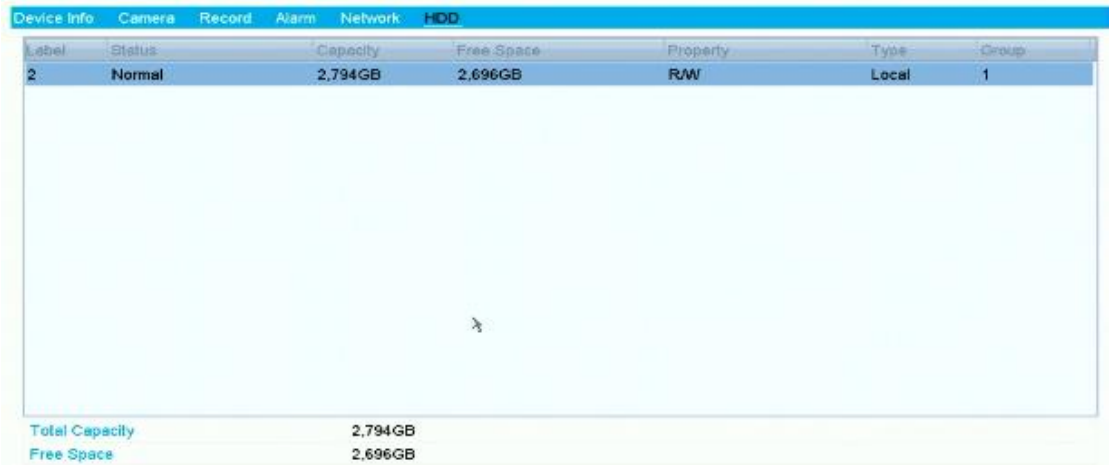


Figure 9. 11 View HDD Status (2)

9.6 HDD Detection

Purpose:

The device provides the HDD detection function such as the adopting of the S.M.A.R.T. and the Bad Sector Detection technique. The S.M.A.R.T. *(*Self-Monitoring, Analysis and Reporting Technology*)* is a monitoring system for HDD to detect and report on various indicators of reliability in the hopes of anticipating failures.

S.M.A.R.T. Settings

Steps:

1. Enter the S.M.A.R.T Settings interface.
   Menu > Maintenance >HDD Detect
2. Select the HDD to view its S.M.A.R.T information list, as shown in Figure 9. 12.

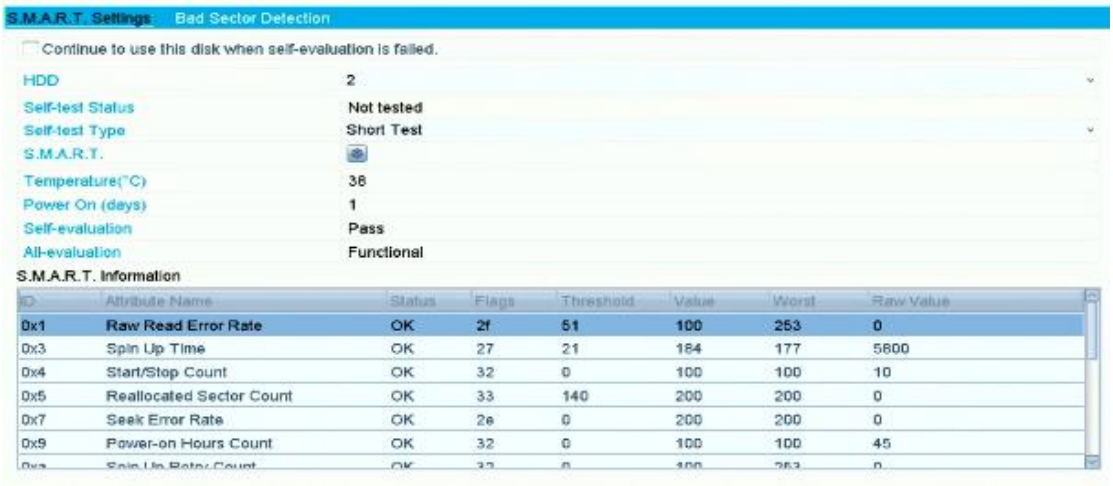


Figure 9. 12 S.M.A.R.T Settings Interface

The related information of the S.M.A.R.T. is shown on the interface.

You can choose the self-test types as Short Test, Expanded Test or the Conveyance Test.

Click the start button to start the S.M.A.R.T. HDD self-evaluation.

Note:

If you want to use the HDD even when the S.M.A.R.T. checking is failed, you can check the checkbox of the **Continue to use the disk when self-evaluation is failed** item.

Bad Sector Detection

Steps:

1. Click the Bad Sector Detection tab.
2. Select the HDD No. in the dropdown list you want to configure, and choose All Detection or Key Area Detection as the detection type.
3. Click the **Detect** button to start the detection.

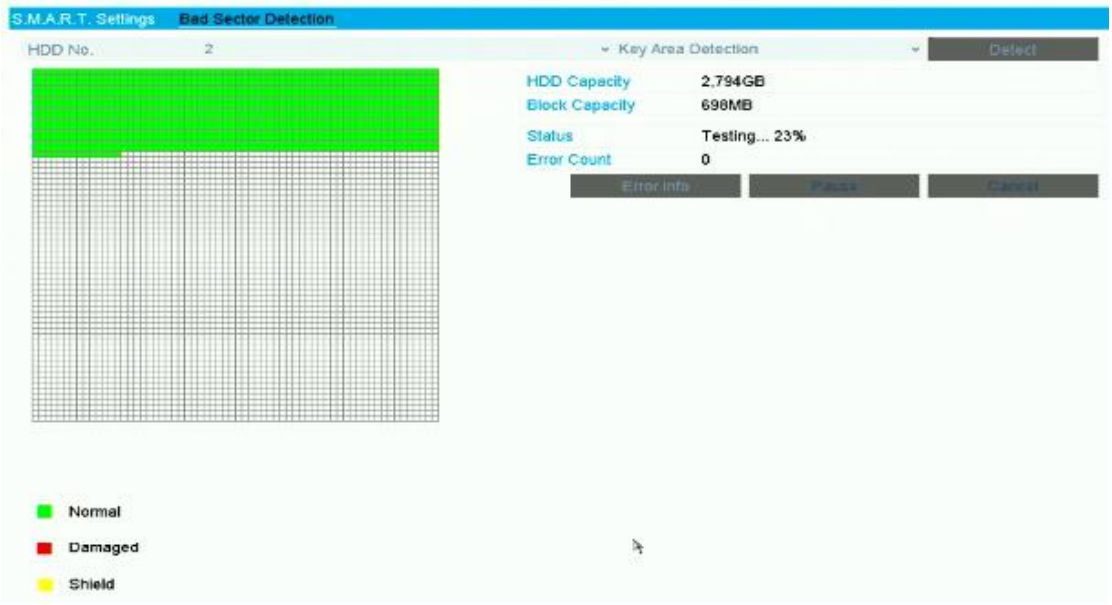


Figure 9. 13 Bad Sector Detection

And you can click **Error info** button to see the detailed damage information.

And you can also pause/resume or cancel the detection.

9.7 Configuring HDD Error Alarms

Purpose:

You can configure the HDD error alarms when the HDD status is *Uninitialized* or *Abnormal*.

Steps:

1. Enter the Exception interface.

   Menu > Configuration > Exceptions
2. Select the Exception Type to **HDD Error** from the dropdown list.
3. Click the checkbox(s) below to select the HDD error alarm type (s).

   Note:

   The alarm type can be selected to: Audible Warning, Notify Surveillance Center, Send Email and Trigger Alarm Output. Please refer to *Chapter Setting Alarm Response Actions*.
4. When the Trigger Alarm Output is selected, you can also select the alarm output to be triggered from the list below.
5. Click the **Apply** button to save the settings

Chapter 10 Camera Settings

10.1 Configuring OSD Settings

Purpose:

You can configure the OSD (On-screen Display) settings for the camera, including date /time, camera name, etc.

Steps:

1. Enter the OSD Configuration interface.
   Menu > Camera > OSD
2. Select the camera to configure OSD settings.
3. Edit the Camera Name in the text field.
4. Configure the Display Name, Display Date and Display Week by clicking the checkbox.
5. Select the Date Format, Time Format and Display Mode.

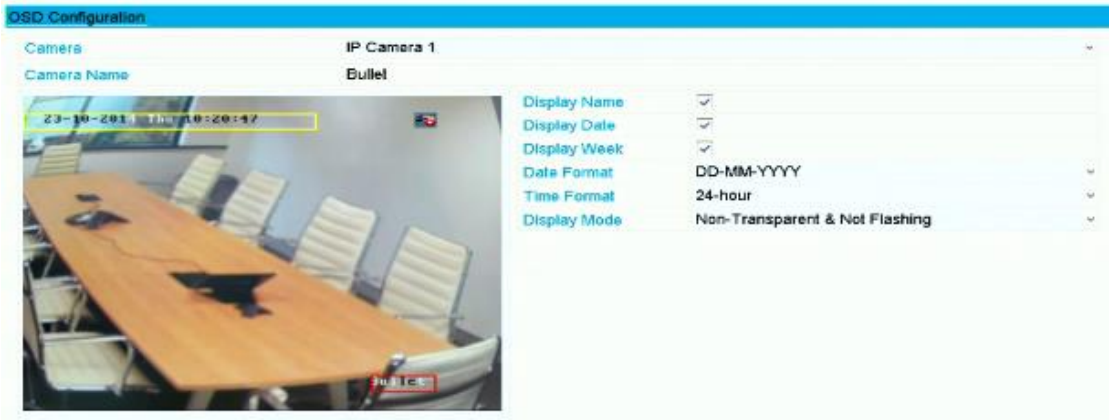


Figure 10. 1 OSD Configuration Interface

6. You can use the mouse to click and drag the text frame on the preview window to adjust the OSD position.
7. Click the **Apply** button to apply the settings.

10.2 Configuring Privacy Mask

Purpose:

You are allowed to configure the four-sided privacy mask zones that cannot be viewed by the operator. The privacy mask can prevent certain surveillance areas to be viewed or recorded.

Steps:

1. Enter the Privacy Mask Settings interface.
   Menu > Camera >Privacy Mask
2. Select the camera to set privacy mask.
3. Click the checkbox of **Enable Privacy Mask** to enable this feature.

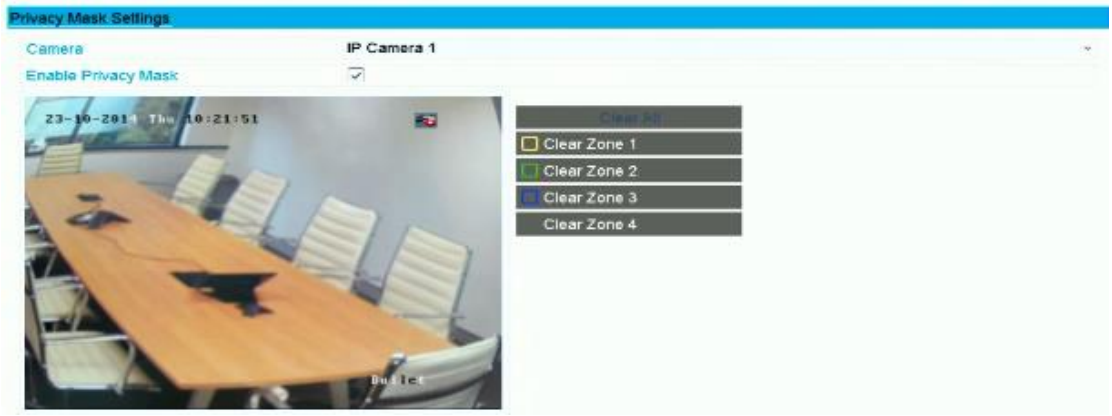


Figure 10. 2 Privacy Mask Settings Interface

4. Use the mouse to draw a zone on the window. The zones will be marked with different frame colors.
   Note:
   Up to 4 privacy masks zones can be configured and the size of each area can be adjusted.
5. The configured privacy mask zones on the window can be cleared by clicking the corresponding Clear Zone1-4 icons on the right side of the window, or click **Clear All** to clear all zones.

Figure 10. 3 Set Privacy Mask Area

6. Click the **Apply** button to save the settings.

10.3 Configuring Video Parameters

Steps:

1. Enter the Image Settings interface.

   Menu > Camera >Image

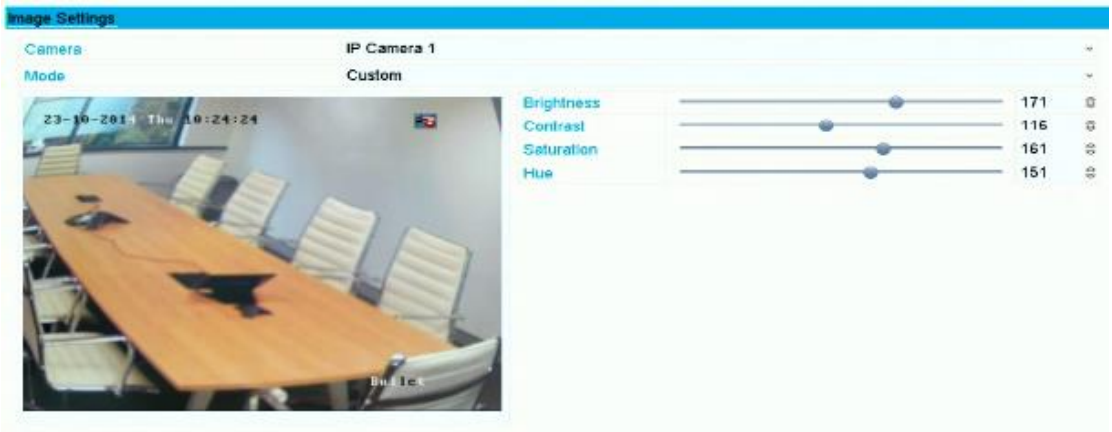


Figure 10. 4 Image Settings Interface

2. Select the camera to set image parameters.
3. You can click on the arrow to change the value of each parameter.
4. Click the **Apply** button to save the settings.

Chapter 11 NVR Management and Maintenance

11.1 Viewing System Information

11.1.1 Viewing Device Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **Device Info** tab to enter the Device Information menu to view the device name, model, serial No. , firmware version and encode version, as shown in Figure 11. 1.

Figure 11. 1 Device Information Interface

11.1.2 Viewing Camera Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **Camera** tab to enter the Camera Information menu to view the status of each camera, as shown below.

Figure 11. 2 Camera Information Interface

11.1.3 Viewing Record Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **Record** tab to enter the Record Information menu to view the recording status and parameters of each camera, as shown in Figure 11. 3.

Device Info
Camera
Record
Alarm
Network
HDD
Camera No.
Recording S...
Stream Type
Frame Rate
Bitrate(Kbps)
Resolution
Record Type
Encoding P...
Redundant ...
D1 Used Video Full Frame 4096 2048*1536 Manual Continuous No
D2 Used Video Full Frame 4096 2048*1536 Manual Continuous No
D3 Used Video Full Frame 4096 2048*1536 Manual Continuous No
D4 Not used Video & Audio Full Frame 2048 Unknown Resoluti... Continuous No
D5 Not used Video & Audio Full Frame 2048 Unknown Resoluti... Continuous No
D6 Not used Video & Audio Full Frame 2048 Unknown Resoluti... Continuous No

Figure 11. 3 Record Information Interface

11.1.4 Viewing Alarm Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **Alarm** tab to enter the Alarm Information menu to view the alarm information.

11.1.5 Viewing Network Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **Network** tab to enter the Network Information menu to view the network information, as shown in Figure 11. 4.

Figure 11. 4 Network Information Interface

11.1.6 Viewing HDD Information

Steps:

1. Enter the System Information interface.
   Menu > Maintenance > System Info
2. Click the **HDD** tab to enter the HDD Information menu to view the HDD status, free space, property, etc., as shown below.

Figure 11. 5 HDD Information Interface

11.2 Searching & Export Log Files

Purpose:

The operation, alarm, exception and information of the NVR can be stored in log files, which can be viewed and exported at any time.

Steps:

1. Enter the Log Search interface.

   Menu > Maintenance > Log Information

Figure 11. 6 Log Search Interface

2. Set the log search conditions to refine your search, including the Start Time, End Time, Major Type and Minor Type.
3. Click the **Search** button to start search log files.
4. The matched log files will be displayed on the list shown below.

Search Result
No.
Major Type
Time
Minor Type
Parameter
Play
Details
1 Information 23-10-2014 00:42:16 HDD S.M.A.R.T. N/A
2 Information 23-10-2014 01:42:17 HDD S.M.A.R.T. N/A
3 Information 23-10-2014 02:42:21 HDD S.M.A.R.T. N/A
4 Information 23-10-2014 03:42:23 HDD S.M.A.R.T. N/A
5 Information 23-10-2014 04:42:23 HDD S.M.A.R.T. N/A
6 Information 23-10-2014 06:42:23 HDD S.M.A.R.T. N/A
7 Alarm 23-10-2014 06:42:05 Motion Detectio... N/A
8 Information 23-10-2014 06:42:24 HDD S.M.A.R.T. N/A
9 Alarm 23-10-2014 06:42:54 Motion Detectio... N/A
10 Alarm 23-10-2014 06:43:22 Motion Detectio... N/A
11 Alarm 23-10-2014 06:43:35 Motion Detectio... N/A
12 Alarm 23-10-2014 06:46:17 Motion Detectio... N/A
13 Alarm 23-10-2014 06:46:30 Motion Detectio... N/A
14 Information 23-10-2014 07:42:24 HDD S.M.A.R.T. N/A
Total: 245 P: 1/3
Export
Back

Figure 11. 7 Log Search Results

Note:

Up to 2000 log files can be displayed each time.

5. You can click the button of each log or double click it to view its detailed information, as shown. And you can also click the button to view the related video files if available.

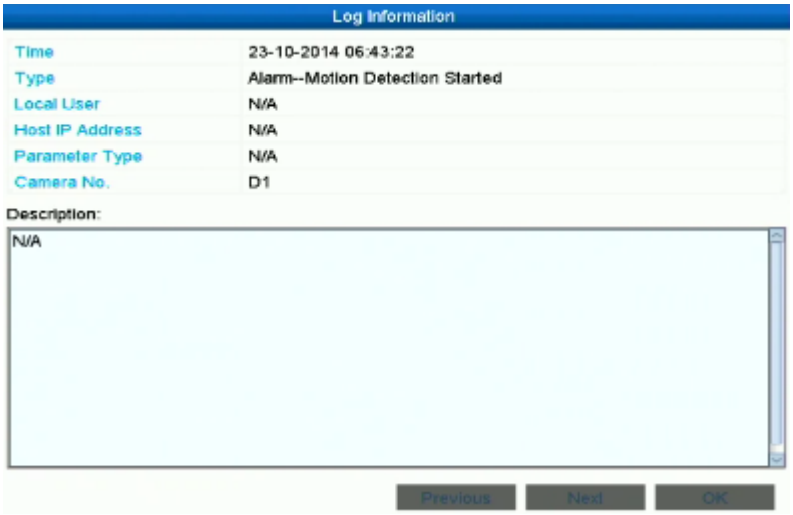


Figure 11. 8 Log Details

6. If you want to export the log files, click the **Export** button to enter the Export menu, as shown below.

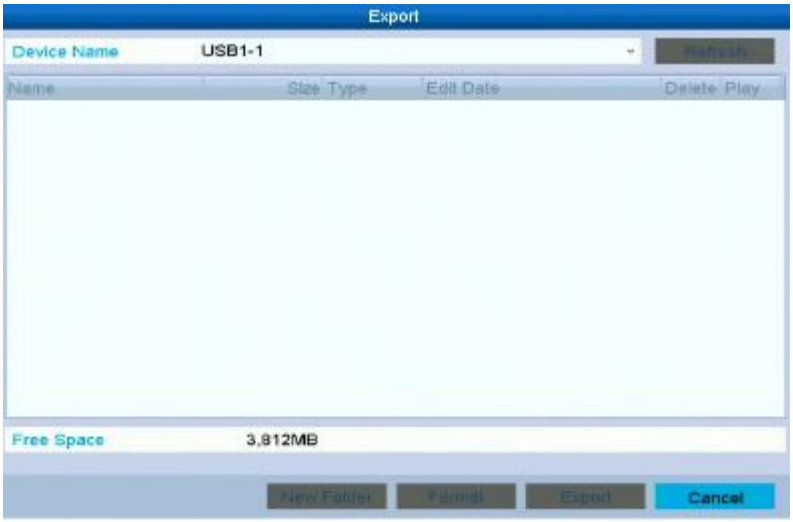


Figure 11. 9 Export Log Files

7. Select the backup device from the dropdown list of **Device Name**.
8. Click the **Export** to export the log files to the selected backup device.
   You can click the **New Folder** button to create new folder in the backup device, or click the **Format** button to format the backup device before log export.
   Note:
   - Please connect the backup device to NVR before operating log export.
   - The log files exported to the backup device are named by exporting time, e.g., *20110514124841logBack.txt*.

To export all the log files:

Steps:

1. Enter the Log Information interface.

Menu> Maintenance> Log Information> Log Export

2. Click the **Log Export** tab.

Figure 11. 10 Log Export Interface

3. You can check the checkbox of the HDD.
4. Click the **Export** button to export all the log files stored in the HDD.

11.3 Importing/Exporting IP Camera Info

Purpose:

The information of added IP camera can be generated into an excel file and exported to the local device for backup, including the IP address, manage port, password of admin, etc.. And the exported file can be edited on your PC, like adding or deleting the content, and copy the setting to other devices by importing the excel file to it.

Steps:

1. Enter the camera management interface.
   Menu > Camera > IP Camera Import/Export
2. Click the IP Camera Import/Export tab, the content of detected plugged external device appears.
3. Click the **Export** button to export configuration files to the selected local backup device.
4. To import a configuration file, select the file from the selected backup device and click the **Import** button. After the importing process is completed, you must reboot the NVR.

11.4 Importing/Exporting Configuration Files

Purpose:

The configuration files of the NVR can be exported to local device for backup; and the configuration files of one NVR can be imported to multiple NVR devices if they are to be configured with the same parameters.

Steps:

1. Enter the Import/Export Configuration File interface.

   Menu > Maintenance >Import/Export

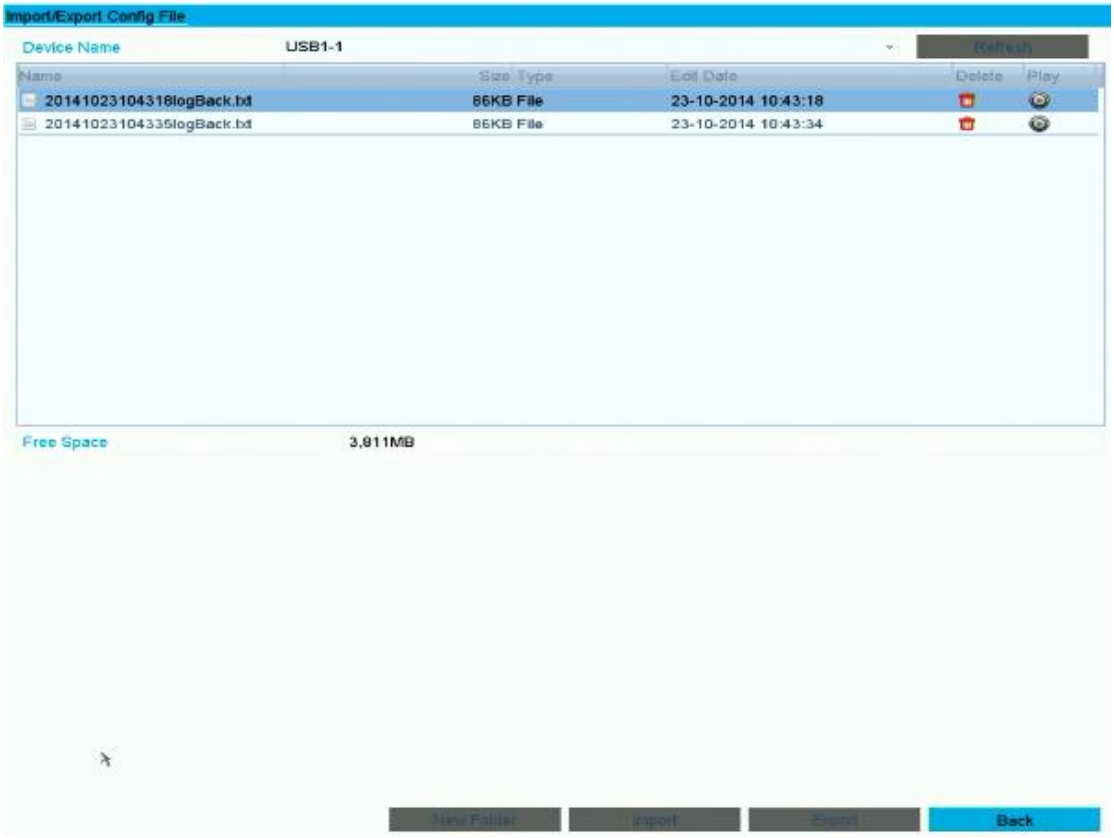


Figure 11. 11 Import/Export Config File

2. Click the **Export** button to export configuration files to the selected local backup device.
3. To import a configuration file, select the file from the selected backup device and click the **Import** button.

   After the import process is completed, you must reboot the NVR.

Note:

After having finished the import of configuration files, the device will reboot automatically.

11.5 Upgrading System

Purpose:

The firmware on your NVR can be upgraded by local backup device or remote FTP server.

11.5.1 Upgrading by Local Backup Device

Steps:

1. Connect your NVR with a local backup device where the update firmware file is located.
2. Enter the Upgrade interface.

   Menu >Maintenance>Upgrade
3. Click the **Local Upgrade** tab to enter the local upgrade menu, as shown below.

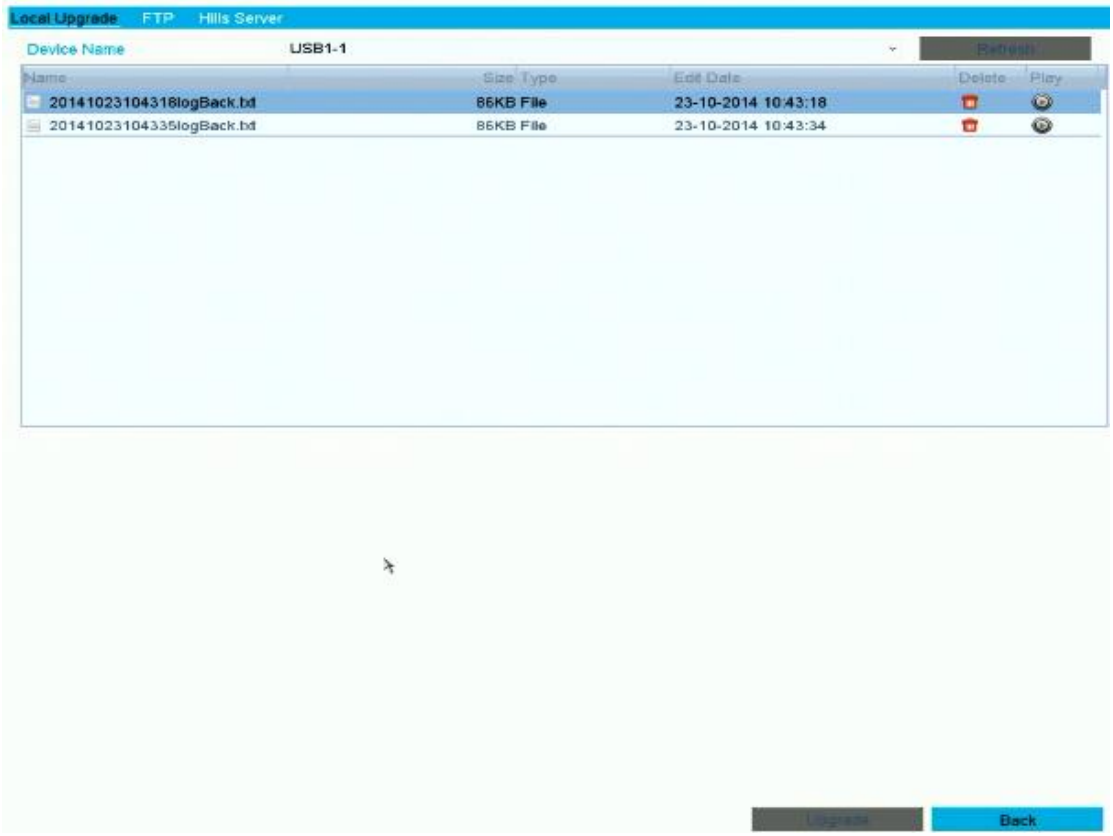


Figure 11. 12 Local Upgrade Interface

4. Select the update file from the backup device.
5. Click the **Upgrade** button to start upgrading.
6. After the upgrading is complete, reboot the NVR to activate the new firmware.

11.5.2 Upgrading by FTP

Purpose:

Ensure the network connection of the PC (running FTP server) and the device is valid and correct. Run the FTP server on the PC and copy the firmware into the corresponding directory of your PC.

Note:

Refer to the user manual of the FTP server to set the FTP server on your PC and put the firmware file into the directory as required.

Steps:

1. Enter the Upgrade interface.
   Menu >Maintenance>Upgrade
2. Click the **FTP** tab to enter the local upgrade interface, as shown in Figure 11. 13.

Figure 11. 13 FTP Upgrade Interface

3. Enter the FTP Server Address in the text field.
4. Click the **Upgrade** button to start upgrading.
5. After the upgrading is complete, reboot the NVR to activate the new firmware.

11.6 Restoring Default Settings

Steps:

1. Enter the Default interface.

   Menu > Maintenance > Default

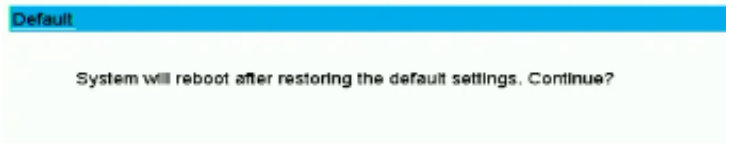


Figure 11. 14 Restore Factory Default

2. Click the **OK** button to restore the default settings.

Note:

Except the network parameters (including IP address, subnet mask, gateway, MTU, NIC working mode, default route and server port), all other parameters of the device will be restored to factory default settings.

Chapter 12 Others

12.1 Configuring RS-232 Serial Port

Purpose:

The RS-232 port can be used in two ways:

- Parameters Configuration: Connect a PC to the NVR through the PC serial port. Device parameters can be configured by using software such as HyperTerminal. The serial port parameters must be the same as the NVR's when connecting with the PC serial port.
- Transparent Channel: Connect a serial device directly to the NVR. The serial device will be controlled remotely by the PC through the network and the protocol of the serial device.

Steps:

1. Enter the RS-232 Settings interface.

   Menu >Configuration> RS-232

Figure 12. 1 RS-232 Settings Interface

2. Configure RS-232 parameters, including baud rate, data bit, stop bit, parity, flow control and usage.
3. Click the **Apply** button to save the settings.

12.2 Configuring General Settings

Purpose:

You can configure the BNC output standard, VGA output resolution, mouse pointer speed through the Menu > Configuration > General interface.

Steps:

1. Enter the General Settings interface.
   Menu >Configuration> General
2. Select the **General** tab.

Figure 12. 2 General Settings Interface

3. Configure the following settings:
   - **Language:** The default language used is *English*.
   - **Resolution:** Select the resolution for the video output, which must be the same with the resolution of the monitor screen.
   - **Time Zone:** Select the time zone.
   - **Date Format:** Select the date format.
   - **System Date:** Select the system date.
   - **System Time:** Select the system time.
   - **Mouse Pointer Speed:** Set the speed of mouse pointer; 4 levels are configurable.
   - **Enable Wizard:** Enable/disable the Wizard when the device starts up.
   - **Enable Password:** Enable/disable the use of the login password.
4. Click the **Apply** button to save the settings.

12.3 Configuring DST Settings

Steps:

1. Enter the General Settings interface.
   Menu >Configuration>General
2. Choose **DST Settings** tab.

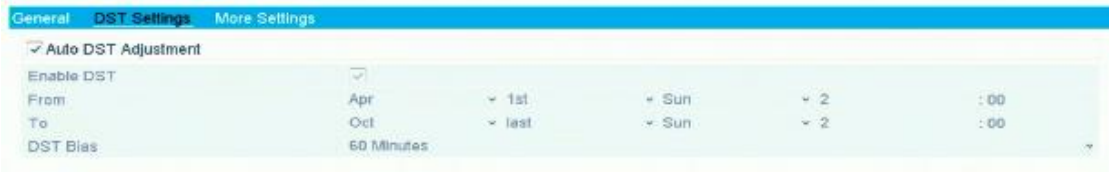


Figure 12. 3 DST Settings Interface

You can check the checkbox before the Auto DST Adjustment item.

Or you can manually check the Enable DST checkbox, and then you choose the date of the DST period.

12.4 Configuring More Settings for Device Parameters

Steps:

1. Enter the General Settings interface.
   Menu >Configuration>General
2. Click the **More Settings** tab to enter the More Settings interface, as shown in Figure 12. 4.

Figure 12. 4 More Settings Interface

3. Configure the following settings:
   - **Device Name:** Edit the name of NVR.
   - **Device No.:** Edit the serial number of NVR. The Device No. can be set in the range of 1~255, and the default No. is 255. The number is used for the remote and keyboard control.
   - **Auto Logout:** Set timeout time for menu inactivity. E.g., when the timeout time is set to *5 Minutes*, then the system will exit from the current operation menu to live view screen after 5 minutes of menu inactivity.
   - **Menu Output Mode:** You can choose the menu display on different video output. By default, only HDMI™ /VGA is selectable.
4. Click the **Apply** button to save the settings.

12.5 Managing User Accounts

Purpose:

There is a default account in the NVR: *Administrator*. The *Administrator* user name is *admin* and the password is *12345*. The *Administrator* has the permission to add and delete user and configure user parameters.

12.5.1 Adding a User

Steps:

1. Enter the User Management interface.

   Menu >Configuration>User

Figure 12. 5 User Management Interface

2. Click the **Add** button to enter the Add User interface.

Figure 12. 6 Add User Menu

3. Enter the information for new user, including **User Name**, **Password**, **Level** and **User's MAC Address**.

   Level: Set the user level to Operator or Guest. Different user levels have different operating permission.

   - **Operator:** The *Operator* user level has permission of Two-way Audio in Remote Configuration and all operating permission in Camera Configuration by default.
   - **Guest:** The Guest user has no permission of Two-way Audio in Remote Configuration and only has the local/remote playback in the Camera Configuration by default.

   User's MAC Address: The MAC address of the remote PC which logs onto the NVR. If it is configured and enabled, it only allows the remote user with this MAC address to access the NVR.

4. Click the **OK** button to save the settings and go back to the User Management interface. The added new user will be displayed on the list, as shown in Figure 12. 7.

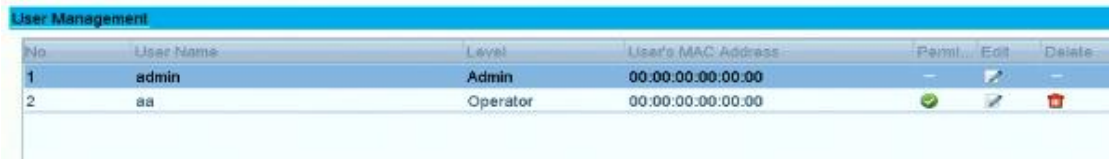


Figure 12. 7 Added User Listed in User Management Interface

5. Select the user from the list and then click the button to enter the Permission settings interface, as shown in Figure 12. 8.

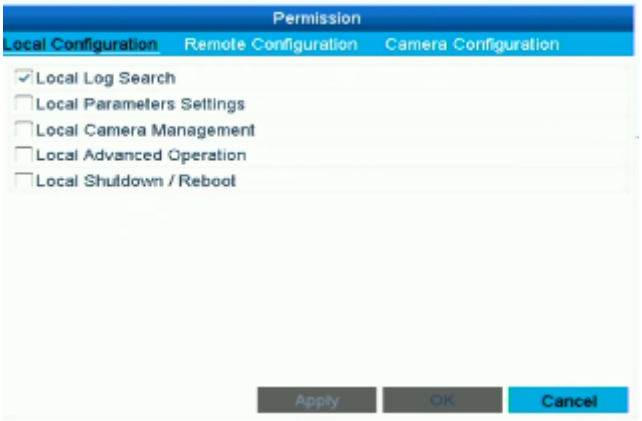


Figure 12. 8 User Permission Settings Interface

6. Set the operating permission of Local Configuration, Remote Configuration and Camera Configuration for the user.

Local Configuration

- Local Log Search: Searching and viewing logs and system information of NVR.
- Local Parameters Settings: Configuring parameters, restoring factory default parameters and importing/exporting configuration files.
- Local Camera Management: The adding, deleting and editing of IP cameras.
- Local Advanced Operation: Operating HDD management (initializing HDD, setting HDD property), upgrading system firmware, clearing I/O alarm output.
- Local Shutdown Reboot: Shutting down or rebooting the NVR.

Remote Configuration

- Remote Log Search: Remotely viewing logs that are saved on the NVR.
- Remote Parameters Settings: Remotely configuring parameters, restoring factory default parameters and importing/exporting configuration files.
- Remote Camera Management: Remote adding, deleting and editing of the IP cameras.
- Remote Serial Port Control: Configuring settings for RS-232 and RS-485 ports.
- Remote Video Output Control: Sending remote button control signal.
- Two-Way Audio: Realizing two-way radio between the remote client and the NVR.
- Remote Alarm Control: Remotely arming (notify alarm and exception message to the remote client) and controlling the alarm output.
- Remote Advanced Operation: Remotely operating HDD management (initializing HDD, setting HDD property), upgrading system firmware, clearing I/O alarm output.
- Remote Shutdown/Reboot: Remotely shutting down or rebooting the NVR.

Camera Configuration

- Remote Live View: Remotely viewing live video of the selected camera (s).
- Local Manual Operation: Locally starting/stopping manual recording and alarm output of the selected

camera (s).

- Remote Manual Operation: Remotely starting/stopping manual recording and alarm output of the selected camera (s).
- Local Playback: Locally playing back recorded files of the selected camera (s).
- Remote Playback: Remotely playing back recorded files of the selected camera (s).
- Local PTZ Control: Locally controlling PTZ movement of the selected camera (s).
- Remote PTZ Control: Remotely controlling PTZ movement of the selected camera (s).
- Local Video Export: Locally exporting recorded files of the selected camera (s).

7. Click the **OK** button to save the settings and exit interface.

Note:

Only the *admin* user account has the permission of restoring factory default parameters.

12.5.2 Deleting a User

Steps:

1. Enter the User Management interface.
   Menu >Configuration>User
2. Select the user to be deleted from the list, as shown in Figure 12. 9.

Figure 12. 9 User List

3. Click the icon to delete the selected user.

12.5.3 Editing a User

Steps:

1. Enter the User Management interface.
   Menu >Configuration>User
2. Select the user to be edited from the list, as shown in Figure 12. 9.
3. Click the icon to enter the Edit User interface, as shown below.
   Note:
   The admin user can also be edited.

Operator and Guest

Admin

Figure 12. 10 Edit User Interface

4. Edit the corresponding parameters.
   - **Operator and Guest**
     You can edit the user information, including user name, password, permission level and MAC address. Check the checkbox of **Change Password** if you want to change the password, and input the new one in the text field of **Password** and **Confirm**.
   - **Admin**
     You are only allowed to edit password and MAC address. Check the checkbox of **Change Password** if you want to change the password, and the input the correct old password, and the new one in the text field of **Password** and **Confirm**.
5. Click the **OK** button to save the settings and exit the menu.

Appendix

Glossary

- **Dual Stream:** Dual stream is a technology used to record high resolution video locally while transmitting a lower resolution stream over the network. The two streams are generated by the DVR, with the main stream having a maximum resolution of 4CIF and the sub-stream having a maximum resolution of CIF.
- **HDD:** Acronym for Hard Disk Drive. A storage medium which stores digitally encoded data on platters with magnetic surfaces.
- **DHCP:** Dynamic Host Configuration Protocol (DHCP) is a network application protocol used by devices (DHCP clients) to obtain configuration information for operation in an Internet Protocol network.
- **HTTP:** Acronym for Hypertext Transfer Protocol. A protocol to transfer hypertext request and information between servers and browsers over a network
- **PPPoE:** PPPoE, Point-to-Point Protocol over Ethernet, is a network protocol for encapsulating Point-to-Point Protocol (PPP) frames inside Ethernet frames. It is used mainly with ADSL services where individual users connect to the ADSL transceiver (modem) over Ethernet and in plain Metro Ethernet networks.
- **DDNS:** Dynamic DNS is a method, protocol, or network service that provides the capability for a networked device, such as a router or computer system using the Internet Protocol Suite, to notify a domain name server to change, in real time (ad-hoc) the active DNS configuration of its configured hostnames, addresses or other information stored in DNS.
- **Hybrid DVR:** A hybrid DVR is a combination of a DVR and NVR.
- **NTP:** Acronym for Network Time Protocol. A protocol designed to synchronize the clocks of computers over a network.
- **NTSC:** Acronym for National Television System Committee. NTSC is an analog television standard used in such countries as the United States and Japan. Each frame of anNTSC signal contains 525 scan lines at 60Hz.
- **NVR:** Acronym for Network Video Recorder. An NVR can be a PC-based or embedded system used for centralized management and storage for IP cameras, IP Domes and other DVRs.
- **PAL:** Acronym for Phase Alternating Line. PAL is also another video standard used in broadcast televisions systems in large parts of the world. PAL signal contains 625 scan lines at 50Hz.
- **PTZ:** Acronym for Pan, Tilt, Zoom. PTZ cameras are motor driven systems that allow the camera to pan left and right, tilt up and down and zoom in and out.
- **USB:** Acronym for Universal Serial Bus. USB is a plug-and-play serial bus standard to interface devices to a host computer.

Troubleshooting

- **No image displayed on the monitor after starting up normally.**

  Possible Reasons

  a) No VGA or HDMI™ connections.

  b) Connection cable is damaged.

  c) Input mode of the monitor is incorrect.

  Steps

  1. Verify the device is connected with the monitor via HDMI™ or VGA cable.

     If not, please connect the device with the monitor and reboot.

  2. Verify the connection cable is good.

     If there is still no image display on the monitor after rebooting, please check if the connection cable is good, and change a cable to connect again.

  3. Verify Input mode of the monitor is correct.

     Please check the input mode of the monitor matches with the output mode of the device (e.g. if the output mode of NVR is HDMI™ output, then the input mode of monitor must be the HDMI™ input). And if not, please modify the input mode of monitor.

  4. Check if the fault is solved by the step 1 to step 3.

     If it is solved, finish the process.

     If not, please contact the engineer from our company to do the further process.

- **There is an audible warning sound "Di-Di-Di-DiDi" after a new bought NVR starts up.**

  Possible Reasons

  a) No HDD is installed in the device.

  b) The installed HDD has not been initialized.

  c) The installed HDD is not compatible with the NVR or is broken-down.

  Steps

  1. Verify at least one HDD is installed in the NVR.

     1) If not, please install the compatible HDD.

     Note:

     Please refer to the "Quick Operation Guide" for the HDD installation steps.

     2) If you don't want to install a HDD, select "Menu>Configuration > Exceptions", and uncheck the Audible Warning checkbox of "HDD Error".

  2. Verify the HDD is initialized.

     1) Select "Menu>HDD>General".

     2) If the status of the HDD is "Uninitialized", please check the checkbox of corresponding HDD and click the "Init" button.

  3. Verify the HDD is detected or is in good condition.

     1) Select "Menu>HDD>General".

     2) If the HDD is not detected or the status is "Abnormal", please replace the dedicated HDD according to the requirement.

  4. Check if the fault is solved by the step 1 to step 3.

     If it is solved, finish the process.

     If not, please contact the engineer from our company to do the further process.

- **The status of the added IP camera displays as "Disconnected" when it is connected through Private Protocol. Select "Menu>Camera>Camera>IP Camera" to get the camera status.**

Possible Reasons

a) Network failure, and the NVR and IP camera lost connections.

b) The configured parameters are incorrect when adding the IP camera.

c) Insufficient bandwidth.

Steps

1. Verify the network is connected.
   1) Connect the NVR and PC with the RS-232 cable.
   2) Open the Super Terminal software, and execute the ping command. Input "ping IP" (e.g. ping 172.6.22.131).

   Note:

   Simultaneously press **Ctrl** and **C** to exit the ping command.

   If there exists return information and the time value is little, the network is normal.
2. Verify the configuration parameters are correct.
   1) Select "Menu>Camera>Camera>IP Camera".
   2) Verify the following parameters are the same with those of the connected IP devices, including IP address, protocol, management port, user name and password.
3. Verify the whether the bandwidth is enough.
   1) Select "Menu >Maintenance > Net Detect > Network Stat.".
   2) Check the usage of the access bandwidth, and see if the total bandwidth has reached its limit.
4. Check if the fault is solved by the step 1 to step 3.

   If it is solved, finish the process.

   If not, please contact the engineer from our company to do the further process.

- **The IP camera frequently goes online and offline and the status of it displays as "Disconnected".**

Possible Reasons

a) The IP camera and the NVR versions are not compatible.

b) Unstable power supply of IP camera.

c) Unstable network between IP camera and NVR.

d) Limited flow by the switch connected with IP camera and NVR.

Steps

1. Verify the IP camera and the NVR versions are compatible.
   1) Enter the IP camera Management interface "Menu > Camera > Camera>IP Camera", and view the firmware version of connected IP camera.
   2) Enter the System Info interface "Menu>Maintenance>System Info>Device Info", and view the firmware version of NVR.
2. Verify power supply of IP camera is stable.
   1) Verify the power indicator is normal.
   2) When the IP camera is offline, please try the ping command on PC to check if the PC connects with the IP camera.
3. Verify the network between IP camera and NVR is stable.
   1) When the IP camera is offline, connect PC and NVR with the RS-232 cable.
   2) Open the Super Terminal, use the ping command and keep sending large data packages to the connected IP camera, and check if there exists packet loss.

   Note:

   Simultaneously press **Ctrl** and **C** to exit the ping command.

   Example: Input **ping 172.6.22.131 –l 1472 –f.**
4. Verify the switch is not flow control.

   Check the brand, model of the switch connecting IP camera and NVR, and contact with the manufacturer of the switch to check if it has the function of flow control. If so, please turn it down.

5. Check if the fault is solved by the step 1 to step 4.

   If it is solved, finish the process.

   If not, please contact the engineer from our company to do the further process.

- **No monitor connected with the NVR locally and when you manage the IP camera to connect with the device by web browser remotely, of which the status displays as Connected. And then you connect the device with the monitor via VGA or HDMI™ interface and reboot the device, there is black screen with the mouse cursor.**

  Connect the NVR with the monitor before startup via VGA or HDMI™ interface, and manage the IP camera to connect with the device locally or remotely, the status of IP camera displays as Connect.

  Possible Reasons:

  After connecting the IP camera to the NVR, the image is output via the main spot interface by default.

  Steps:

  1. Enable the output channel.
  2. Select "Menu > Configuration > Live View > View", and select video output interface in the drop-down list and configure the window you want to view.

  Note:

  - The view settings can only be configured by the local operation of NVR.
  - Different camera orders and window-division modes can be set for different output interfaces separately, and digits like "D1"and "D2" stands for the channel number, and "X" means the selected window has no image output.

  3. Check if the fault is solved by the above steps.

     If it is solved, finish the process.

     If not, please contact the engineer from our company to do the further process.

- **Live view stuck when video output locally.**

  Possible Reasons:

  a) Poor network between NVR and IP camera, and there exists packet loss during the transmission.

  b) The frame rate has not reached the real-time frame rate.

  Steps:

  1. Verify the network between NVR and IP camera is connected.
     1) When image is stuck, connect the RS-232 ports on PC and the rear panel of NVR with the RS-232 cable.
     2) Open the Super Terminal, and execute the command of "**ping** *192.168.0.0* **–l 1472 –f**" (the IP address may change according to the real condition), and check if there exists packet loss.

     Note:

     Simultaneously press **Ctrl** and **C** to exit the ping command.

  2. Verify the frame rate is real-time frame rate.

     Select "Menu > Record > Parameters > Record", and set the Frame rate to Full Frame.

  3. Check if the fault is solved by the above steps.

     If it is solved, finish the process.

     If not, please contact the engineer from our company to do the further process.

- **Live view stuck when video output remotely via the Internet Explorer or platform software.**

  Possible Reasons:

  a) Poor network between NVR and IP camera, and there exists packet loss during the transmission.

  b) Poor network between NVR and PC, and there exists packet loss during the transmission.

  c) The performances of hardware are not good enough, including CPU, memory, etc..

  Steps:

1. Verify the network between NVR and IP camera is connected.
   1) When image is stuck, connect the RS-232 ports on PC and the rear panel of NVR with the RS-232 cable.
   2) Open the Super Terminal, and execute the command of "**ping** *192.168.0.0* **–l 1472 –f**" (the IP address may change according to the real condition), and check if there exists packet loss.

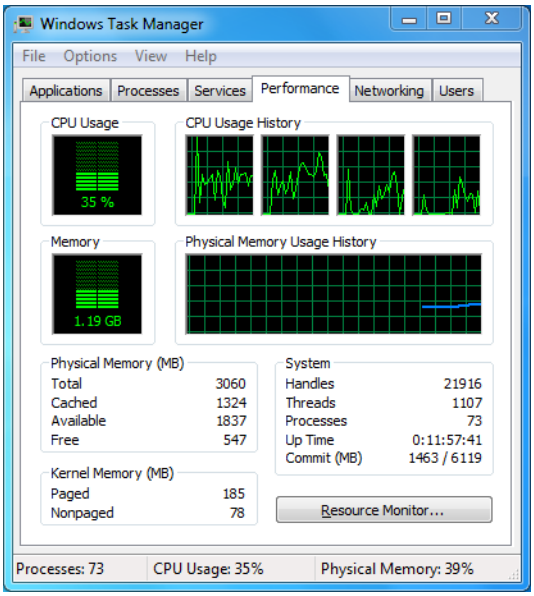
   Note:

   Simultaneously press **Ctrl** and **C** to exit the ping command.
2. Verify the network between NVR and PC is connected.
   1) Open the cmd window in the Start menu, or you can press "windows+R" shortcut key to open it.
   2) Use the ping command to send large packet to the NVR, execute the command of "ping 192.168.0.0 –l 1472 –f" (the IP address may change according to the real condition), and check if there exists packet loss.

   Note:

   Simultaneously press **Ctrl** and **C** to exit the ping command.
3. Verify the hardware of the PC is good enough.

   Simultaneously press **Ctrl**, **Alt** and **Delete** to enter the windows task management interface, as shown in the following figure.



Windows task management interface

   Select the "Performance" tab; check the status of the CPU and Memory.
   If the resource is not enough, please end some unnecessary processes.
4. Check if the fault is solved by the above steps.

   If it is solved, finish the process.

   If not, please contact the engineer from our company to do the further process.

- **When using the NVR to get the live view audio, there is no sound or there is too much noise, or the volume is too low.**

  Possible Reasons:

  a) Cable between the pickup and IP camera is not connected well; impedance mismatches or incompatible.
  b) The stream type is not set as "Video & Audio".
  c) The encoding standard is not supported with NVR.

  Steps:

  1. Verify the cable between the pickup and IP camera is connected well; impedance matches and compatible.

Log in the IP camera directly, and turn the audio on, check if the sound is normal. If not, please contact the manufacturer of the IP camera.

2. Verify the setting parameters are correct.

   Select "Menu > Record > Parameters > Record", and set the Stream Type as "Audio & Video".

3. Verify the audio encoding standard of the IP camera is supported by the NVR.

   NVR supports G722.1 and G711 standards, and if the encoding parameter of the input audio is not one of the previous two standards, you can log in the IP camera to configure it to the supported standard.

4. Check if the fault is solved by the above steps.

   If it is solved, finish the process.

   If not, please contact the engineer from our company to do the further process.

- **The image gets stuck when NVR is playing back by single or multi-channel.**

Possible Reasons:

a) Poor network between NVR and IP camera, and there exists packet loss during the transmission.

b) The frame rate is not the real-time frame rate.

c) The NVR supports up to 16-channel synchronize playback at the resolution of 4CIF, if you want a 16-channel synchronize playback at the resolution of 720p, the frame extracting may occur, which leads to a slight stuck.

Steps:

1. Verify the network between NVR and IP camera is connected.
   1) When image is stuck, connect the RS-232 ports on PC and the rear panel of NVR with the RS-232 cable.
   2) Open the Super Terminal, and execute the command of "**ping** *192.168.0.0* **–l 1472 –f**" (the IP address may change according to the real condition), and check if there exists packet loss.

   Note:

   Simultaneously press the **Ctrl** and **C** to exit the ping command.

2. Verify the frame rate is real-time frame rate.

   Select "Menu > Record > Parameters > Record", and set the Frame Rate to "Full Frame".

3. Verify the hardware can afford the playback.

   Reduce the channel number of playback.

   Select "Menu > Record > Encoding > Record", and set the resolution and bitrate to a lower level.

4. Reduce the number of local playback channel.

   Select "Menu > Playback", and uncheck the checkbox of unnecessary channels.

5. Check if the fault is solved by the above steps.

   If it is solved, finish the process.

   If not, please contact the engineer from our company to do the further process.

- **No record file found in the NVR local HDD, and prompt "No record file found".**

Possible Reasons:

a) The time setting of system is incorrect.

b) The search condition is incorrect.

c) The HDD is error or not detected.

Steps:

1. Verify the system time setting is correct.

   Select "Menu > Configuration > General > General", and verify the "Device Time" is correct.

2. Verify the search condition is correct.

   Select "Playback", and verify the channel and time are correct.

3. Verify the HDD status is normal.

   Select “Menu > HDD > General” to view the HDD status, and verify the HDD is detected and can be read and written normally.

4. Check if the fault is solved by the above steps.

   If it is solved, finish the process.

   If not, please contact the engineer from our company to do the further process.

For further information, including datasheets, FAQ and technical support please visit:

www.hills.com.au/videosecurity